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The Economist

JUNE 7TH–13TH 2008

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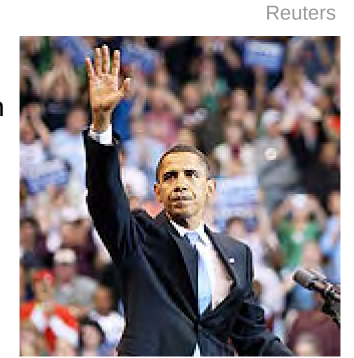
Markets

GDP growth forecasts

Politics this week

Jun 5th 2008
From The Economist print edition

Reuters



Barack Obama secured the support of enough superdelegates to claim victory in the Democratic primaries, making him almost certain to become the first black presidential nominee of a big American party. At a rally Mr Obama described his candidacy as an "historic journey". He also praised his opponent in the primaries, Hillary Clinton. She stopped short of conceding defeat, but plans an event to show party unity. See article

On the last day of voting in the **primaries**, Mr Obama won Montana, as expected, but lost South Dakota to Mrs Clinton, which was a surprise. She earlier won Puerto Rico by a wide margin. See article

John McCain reiterated his challenge to his opponent in the general election to take part in a series of ten joint town-hall meetings, which they would fly to in the same aircraft in order "to embrace the politics of civility".

Mr McCain and Mr Obama made separate speeches at the American Israel Public Affairs Committee, a lobbying group. Mr Obama promised to do "everything" to stop **Iran** from getting a nuclear bomb.

Antoin Rezko, a former fund-raiser for Mr Obama, was found guilty of fraud and money-laundering by a court in Chicago. In a statement, Mr Obama said, "This isn't the Tony Rezko I knew." Separately, Mr Obama severed his 20-year ties with a controversial **church** in Chicago after the emergence of yet another racially charged sermon there. See article

In California, a judge ruled that the state's first **same-sex marriages** could proceed, but a voters' initiative that would overturn their legality qualified for November's ballot.

Rumble in the jungle

After three years during which it slowed down, deforestation in Brazil's **Amazon rainforest** is rising again, according to government figures. Carlos Minc, the newly appointed environment minister, said the government would impound cattle grazing on illegally cleared pasture. See article

In unofficial referendums, two more departments in eastern **Bolivia** voted with large majorities for proposed regional autonomy, after a similar vote in Santa Cruz, the richest department, last month.

Mexico's interior minister said the government would turn down an offer of aid from the United States to fight drug-traffickers if the American Congress insisted on tying the money to civilian investigations of abuses by the Mexican army.

All over some cartoons

EPA



At least six people died in a bomb attack near the Danish embassy in Islamabad, **Pakistan's** capital. Some officials blamed al-Qaeda, which has threatened Denmark over caricatures of the Prophet Muhammad published in the Danish press.

Nearly 12,000 local political leaders were detained in **Bangladesh** after the breakdown of talks between the government and the two big political parties over elections scheduled for December. The parties are demanding the release of their leaders, both of whom are detained on charges of corruption. See article

There were further violent clashes in northern **India** involving members of the Gujjar tribe, who want to be included on a list of disadvantaged tribal groups entitled to preferential access to jobs and education. At least 40 people have died.

Robert Gates, America's defence secretary, accused **Myanmar's** government of “criminal neglect” for its obstructive attitude to foreign relief efforts after last month's cyclone. America withdrew the ships it had sent to wait near Myanmar in the hope of delivering aid. See article

South Korea asked to amend an agreement with the United States about beef imports. The agreement has provoked weeks of anti-government protests in Seoul over fears of mad-cow disease. See article

Trying to tackle a world crisis

At a United Nations **food summit** in Rome, the UN's secretary-general, Ban Ki-moon, said food output would have to rise by 50% by 2030; the World Food Programme said it would distribute $1.2 billion more in food aid; and Zimbabwe's Robert Mugabe and Iran's Mahmoud Ahmadinejad blamed the West for increases in food prices. The presence of Mr Mugabe was widely condemned. A third of Zimbabweans need food aid because of the country's disastrous land-reform policies. See article

Arthur Mutambara, a senior opposition figure in **Zimbabawe**, was arrested, and later released, for criticising Mr Mugabe in a newspaper. Morgan Tsvangirai, the leader of the main opposition party, was briefly detained while campaigning in the presidential run-off, due on June 27th. See article

American forces recorded their lowest military death toll in **Iraq** since the invasion of the country in 2003; 19 were killed in May. But in the biggest such attack for months, at least 15 people were killed by a bomb in Baghdad. Meanwhile, Australia began withdrawing its 550-strong troop contingent from the allied coalition, fulfilling a pledge made by the prime minister, Kevin Rudd.

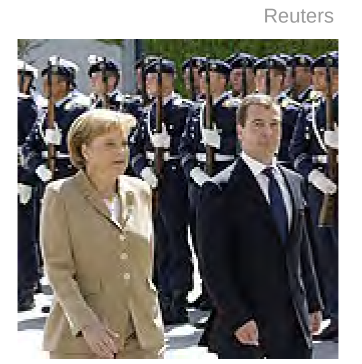
The remains of five **Israeli soldiers** killed in the 2006 war with the Lebanese-based Islamic Hizbullah were returned by the group to Israel. This came after the Israelis released a Lebanese-born man accused of spying for Hizbullah. Israel denied that there had been any deal.

Spoiled ballot

Macedonia's election was marred by violence and alleged irregularities, mainly in ethnic-Albanian areas. The centre-right ruling party of Nikola Gruevski won the poll easily, although he will still want the backing of one of the Albanian parties to form a government. See article

The **Russian president**, Dmitry Medvedev, took his first trip westwards, going to Berlin to meet the German chancellor, Angela Merkel. But his predecessor, Vladimir Putin, who is now prime minister, upstaged him by visiting Paris the previous week.

Reuters



In a show of **Kremlin** power, Mr Medvedev sacked the chief of the general staff of the Russian army, on the ground that he was blocking progress with military reform.

Germany's shops began to run out of milk after protests against low milk prices by dairy farmers, who have been blockading milk factories and pouring milk on the ground.

Business this week

Jun 5th 2008
From The Economist print edition

More consolidation loomed in the telecoms industry. **France Telecom** launched a friendly bid for **TeliaSonera**, which operates in the Nordic and Baltic countries and parts of Eurasia. If successful, the SKr280 billion ($46.4 billion) deal will create the world's fourth-biggest telecoms operator. Meanwhile, investors were animated by the news that **Verizon Wireless** is holding merger talks with **Alltel**, just seven months after it was sold to a private-equity consortium for $27.5 billion. Their combination would create America's biggest provider of mobile services.

In a rare public statement about the **dollar**, the chairman of the Federal Reserve, Ben Bernanke, said he did not want the greenback to weaken further because it would cause import prices and inflation to rise. America's policy on the dollar is usually left to the Treasury, with which Mr Bernanke promised the Fed would work in collaboration to “carefully monitor” the currency. The dollar rallied against the euro and the yen on his remarks. See article

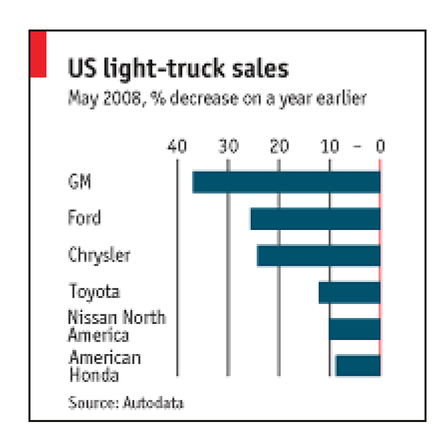
As unsafe as houses

The credit crisis claimed the career of another important banker when Ken Thompson was asked to quit as chief executive of **Wachovia** “at the request of the board”. America's fourth-biggest bank has come under withering criticism from shareholders over its earnings, which have been particularly hurt by its $25 billion takeover, at the peak of the housing boom, of Golden West Financial, a mortgage lender based in California.

Bradford & Bingley, a British bank, announced that it would renegotiate the terms of a recent rights issue to avoid “a fight with the underwriters”, and was selling a 23% stake to **Texas Pacific Group**, a private-equity firm. With the housing market slowing, the news was taken as a portent for other British lenders, causing their share prices to fall sharply. See article

Hummer hammered

General Motors decided to close four factories that make sport-utility vehicles and pickups. Sales of light trucks fell sharply in May. With rising petrol prices and a weakening economy, Americans have deserted petrol-gobbling monsters such as the Hummer, the future of which GM said it was also considering.



The head of the International Energy Agency called on developing countries to cut **fuel subsidies** further and predicted that their cost to emerging economies could double to $100 billion this year. Meanwhile, the governments of India and Malaysia raised the price of subsidised fuel (to the outrage of voters) to offset the cost to the public purse of higher oil prices. Malaysia put up its petrol prices by 40%; fuel subsidies there are reckoned to cost about as much as defence, education and health care combined.

United Airlines said it would scale back its operations, by reducing its fleet by 70 aircraft and closing its cheap-ticket operator, Ted. Other big carriers are also cutting capacity to combat the rocketing price of fuel.

BG Group, a British gas company, suffered a blow when Australia's **Origin Energy** unexpectedly rejected an improved A$13.6 billion ($13 billion) takeover offer. Origin, the largest producer of coal-seam gas in Australia, says it is worth more; it recently doubled its estimate of the gas reserves it owns.

A sunny outlook

Interest flared in solar energy when **Bosch**, a German manufacturer, launched a *euro*1.1 billion ($1.7 billion) bid for **ersol**, which makes solar cells in Germany and California.

Procter & Gamble sold its **Folgers** coffee brand to J.M. Smucker, which makes food spreads, for $3 billion. P&G wants to focus on health and beauty. Though Folgers is America's bestselling coffee, consumers who prefer to take fancier blends as their daily brew are turning elsewhere.

Melvyn Weiss, one of America's most prominent class-action lawyers, was sentenced to 30 months in prison for his role in a kickback scheme that paid people for agreeing to act as plaintiffs in class-action lawsuits. Along with Bill Lerach, his former partner, who was jailed in February, Mr Weiss was once the scourge of boardrooms. He built a career on encouraging investors to sue managers over their companies' poorly performing stock. See article

Despite the credit crisis and a weakening economy, American companies still managed to increase their **charitable donations** last year, according to the Committee Encouraging Corporate Philanthropy, an international forum which is co-chaired by Paul Newman. The median total given among the 155 companies surveyed by the committee was just over $26m, up by 5.6% on 2006 and representing around 1% of pre-tax profits.

KAL's cartoon

Jun 5th 2008
From The Economist print edition

Illustration by Kevin Kallaugher



The presidential election

America at its best

Jun 5th 2008
From The Economist print edition

The primaries have left the United States with a decent choice; now it needs a proper debate about policies



IT IS hard to believe after all the thrills and spills, but the real presidential race is only now beginning. In any other country, the incredible circus that has marked the past year could not have occurred. The business of choosing the main contenders for the top job would have been done behind closed doors, or with a limited franchise and a few weeks of campaigning. Hillary Clinton and Barack Obama, by contrast, have spent well over a year in the most testing and public circumstances imaginable—and that was just to get to the final five months.

The Republicans settled on their candidate more quickly, but theirs was still a marathon by anyone else's standards. And the end of it was surely the right result. In John McCain, the Republicans chose a man whose political courage has led him constantly to attempt to forge bipartisan deals and to speak out against the Bush administration when it went wrong. Conservatives may hate him, but even they can see that he offers the party its only realistic hope in November.

The Democratic race has been longer and nastier; but on June 3rd it too produced probably the right result (see article). Over the past 16 months, the organisational skills and the characters of the two contenders have been revealed. Mrs Clinton, surprisingly in the light of all her claimed experience, was shown up for running a less professional and nimble campaign than her untested rival. She has also displayed what some voters have perceived as a mean streak and others (not enough, though) saw as gritty determination. And she could never allay confusion about the future role of her husband.

Mr Obama has demonstrated charisma, coolness under fire and an impressive understanding of the transforming power of technology in modern politics. Beating the mighty Clinton machine is an astonishing achievement. Even greater though, is his achievement in becoming the first black presidential nominee of either political party. For a country whose past is disfigured by slavery, segregation and unequal voting rights, this is a moment to celebrate. America's history of reinventing and perfecting itself has acquired another page.

But will he play in Pennsylvania?

But that does not make Mr Obama the new messiah. The former law teacher has had obvious problems convincing America's middle-class voters that he understands their concerns. He has also displayed a worrying, somewhat Clintonian slipperiness on difficult issues, both trivial (whether he would wear a flag-pin) and significant (whether he would talk to rogue states). His victory, it must be noted, has been

wafer-thin: in terms of delegates, a couple of hundred out of 4,500; in votes, only a few tens of thousands out of 35m. In the end, the Democrats have, very narrowly, opted for the candidate who has put together a novel coalition of blacks, young people and liberal professional sorts, rather than the candidate of their more traditional blue-collar base. How this coalition fares against the Bushless Republicans remains to be seen.

For what America's voters, and the world's fascinated spectators, have not had so far is much of a policy debate. Yes, there were bone-aching arguments between Mr Obama and Mrs Clinton as to whose plan for health care would work best. And yes, Mr Obama refused to endorse Mrs Clinton's bad plan for a gas-tax holiday. But on the whole, it has been a policy-light contest for the simple reason that there was very little to choose between the two Democrats either on domestic or on foreign policy. Small wonder, then, that the Democratic race focused on character more than content.

All that has now changed. With his victory speech in Minneapolis on June 3rd, Mr Obama took the fight to Mr McCain. Though there are a fair number of things on which Mr Obama and Mr McCain, admirably, agree (a cap-and-trade system for carbon emissions, the immediate closure of Guantánamo and a more multilateral approach to diplomacy, to name just three), there is a lot more that they disagree over.

Blood, treasure and votes

The choice will be starkest over Iraq. Mr McCain backed the war in the first place, and he proposes to stay the course there no matter how long it takes. Mr Obama opposed the “dumb” war from the start and has pledged to withdraw all combat troops within 16 months, though he has lately wriggled a little on this commitment. Although most Americans now think the war was a mistake, polls suggest that Mr McCain's determination to see it through may stand him in better stead with voters than Mr Obama's determination to pull out whatever the consequences, especially since the tide of war seems at last to have shifted firmly in America's favour. In general, Mr McCain will offer a much more robust approach to security issues than Mr Obama—and that may help him.

That said, the war is clearly receding as a political issue, just as concerns about recession are growing. America no longer has a Hummer economy (General Motors is considering selling off the gas guzzler). And there are clear choices about how to fix it. Mr McCain offers orthodox supply-side solutions, stressing deregulation, free trade, competitiveness and the use of market mechanisms to cure the problems in everything from health care to education to pensions. The trouble for him is that America is already a pretty deregulated place, and many voters feel that globalisation has brought them much less than was promised (and bankers a lot more). Mr Obama offers a very different vision: more spending on education and training, an expensive expansion of health care to (almost) all Americans and better benefits for the unemployed. His problem will be convincing sceptics that his sums add up, though it may well be that voters, battered by falling house prices and rising oil prices prefer not to worry too much about that.

Both candidates have their flaws and their admirable points; the doughty but sometimes cranky old warrior makes a fine contrast with the inspirational but sometimes vaporous young visionary. Voters now have those five months to study them before making up their minds (and *The Economist* will be doing the same). But, on the face of it, this is the most impressive choice America has had for a very long time.

Central banks

Playing politics with the Fed

Jun 5th 2008
From The Economist print edition

By refusing to confirm new governors, Congress is putting the world's most important central bank at risk

Alamy



SMALL, weak and vulnerable: hardly an accurate description of America's central bank. But soon it could be. The Federal Reserve is the world's most important financial institution. Just this week Ben Bernanke, its chairman, demonstrated its influence when a rare comment on the dollar's weakness sent the currency soaring (see article). Yet the Fed's standing is in a potentially parlous state, thanks to political brinkmanship by the Democrat-controlled Senate.

For more than a year, two seats on the Fed's seven-member board of governors have been empty, because the Senate has been unwilling to confirm George Bush's nominees to the job. It has also refused a new term for the Bush-appointed Randall Kroszner, who is hanging on in limbo. On May 28th Rick Mishkin, another governor, said he would depart in August. If the Senate continues to delay, the Fed's board will have only four members—fewer than at any time since at least the 1930s.

No one doubts Mr Bush's candidates are qualified. The hold-up is ideological. Democrats want to wait until after November's election so that a new president can, as one senator put it, “remake the Fed” by appointing a clutch of new people at once. That is reckless on several counts.

In the short term, the central bank will be starved of talent and leadership at an extremely tricky time. Power in monetary policy will also shift. Like much of the American government, the central bank is an artful balance of federal and local. The Fed's key policy rate is set by the Federal Open Market Committee. Its voting members consist of the Fed's seven governors and five presidents from the 12 regional Federal Reserve banks. If the Fed's board has only four governors, the regional presidents will be in the majority—contrary to what the Fed's founders intended. Ironically, several of the regional presidents are decidedly hawkish, so the result might be a greater focus on inflation than growth—the opposite of what many Democratic senators are likely to fret about.

The real danger, however, lies further ahead. Mr Bernanke's term as Fed chairman expires in 2010. With lots of governors to appoint at once, and the prospect of a new chairman within two years, the next president will have unprecedented power to reshape the Fed. Governors are appointed for overlapping 14-year terms precisely to avoid this concentration of power.

Independence, schmindependence

That alone is dangerous. It is doubly worrying given the Democrats' seeming insouciance about politicising the Fed. So far the senators' focus has been on consumer protection. They want governors

who would have done more to stop predatory subprime lending. But, in the aftermath of the Bear Stearns rescue, the overhaul of financial regulation is likely to be far broader. Wall Street's attempts to wriggle out of that regulation have already begun (see article). The Fed will be central to ensuring that institutions implicitly backed by the state are appropriately regulated: impartiality is crucial.

But the biggest risk lies with monetary policy. Though every American politician pays lip service to the central bank's independence in interest-rate decisions, that independence is more fragile than in other rich countries. The Fed has a dual mandate—to promote full employment and price stability—and no explicit inflation target. With its fuzzier goals, America's central bank is more vulnerable than some others. A set of doveish appointments could soon dissipate the Fed's inflation-fighting credibility. Economic growth is weak and prices are rising uncomfortably fast. Central bankers face difficult decisions. It is no time for politicians to make matters worse.

Climate change

A convenient truth, sadly ignored

Jun 5th 2008
From The Economist print edition

A deal to be done between rich and poor countries on global warming is going begging

Imagine China



IF ALL goes well, in 2011, a year before the Kyoto protocol expires, a new opera will open at La Scala in Milan. It will be based on “An Inconvenient Truth”, the book and film about global warming by Al Gore, the former vice-president. It is easy to see the drama in the story of the failed American presidential candidate turned green crusader (although not in the thickets of statistics into which he sometimes strays). But whether the opera in Milan will end happily or tragically, the composer has not yet revealed.

Does Mr Gore, armed with a PowerPoint presentation and mounted on a rickety mechanical ladder, put the sceptics and recalcitrants of climate change to rout? Or do the world's politicians ignore his song and allow timidity, suspicion and recrimination to vanquish the greater good?

In real life, the answer to those questions is being debated, amid negotiations over a replacement for the Kyoto treaty. Discussions are under way in Bonn and America's Congress right now (see article). The talks are due to culminate in a summit in Denmark next year. But already, the protagonists are blocking out their positions.

Most developing countries are as one: almost all the greenhouse gases that have accumulated over the past two centuries, and are now heating up the planet, came from the chimneys and exhaust pipes of the rich world. What is more, each person in a rich country adds far more to the build-up than someone from a poorer country does. So, the likes of China and India conclude, the rich world must shoulder its responsibility for fixing the climate.

Meanwhile, in America in particular, a chorus of leery politicians points out that China is now churning out greenhouse gases faster than any other country, even if its cumulative tally remains relatively low. Indonesia, India and Brazil are also prolific polluters. Emissions from developing countries are growing so fast that they are likely to swamp any reductions made by the rich world. So there is no point in America and other rich nations cleaning up their act unless rapidly industrialising countries do too.

The fat lady is visible through the Beijing smog

Inconveniently enough, both these arguments are valid. But so is another important and more encouraging observation. It is easier to affect emissions in poor countries, since such places tend to be less energy efficient, to have adopted fewer measures for cutting pollution and to be installing more new capacity. That suggests there is a deal to be done. If the rich world agrees to pay for most of any reduction in the world's emissions, developing countries will allow the cuts to be made wherever they are

cheapest.

That, more or less, is the premise of the Kyoto protocol. Rich countries agreed to cut their emissions, or to pay for equivalent reductions elsewhere under a scheme known as the Clean Development Mechanism (CDM). In some ways, it has been a great success. Eager Western bankers have spent billions of dollars capturing noxious gases, improving energy efficiency and building wind farms in developing countries.

Nonetheless, the scale of the investment remains grossly inadequate. What is more, the scheme gives poor countries a reason to avoid any sort of climate-friendly regulation, including measures they could readily afford. Why spend money, when someone else will pay you to do it? Chinese refrigerant factories, for example, produce a lot of trifluoromethane, which is a potent greenhouse gas, but one that can be easily isolated and destroyed. Yet the government does not regulate the stuff, so that its makers can exploit the CDM to sign lucrative contracts, which the government then taxes heavily.

Again, the outlines of a deal are clear. The rich world should agree to increase the flow of clean investment dramatically, in exchange for a promise from fast-growing developing countries to take some steps of their own to curb emissions. That should not be such a hard sell in China and India. After all, their governments are all too aware of the devastating consequences if global warming were to cause the Himalayan glaciers to melt, or crop yields to fall (see article). Moreover, Chinese and Indian firms, in particular, have become accustomed to the flow of funds from the CDM, and would be unhappy to see it evaporate.

Western countries would benefit too, thanks to the lower cost of cutting emissions abroad. That is why the European Union allows international offsets to be used in its “cap-and-trade” scheme. In this, governments issue a set number of permits to produce greenhouse gases, obliging firms to cut their own emissions or buy spare permits from others. The cap-and-trade scheme that America's Senate began debating this week would also allow firms to fulfil some of their obligations through green investments in other countries.

But the bill in Congress would allow only a small number of offsets, and only from factories that do not compete with American firms—a big hurdle in a globalised world. Worse, to make the bill more palatable to China-bashing politicians, its authors have strengthened provisions that would impose tariffs on energy-intensive imports from countries that are not taking “comparable action” against climate change, meaning all developing countries. That is a recipe for a trade war, which would only compound the economic pain of global warming. Just when a deal is possible, the stage is being set for a tragedy of Wagnerian dimensions.

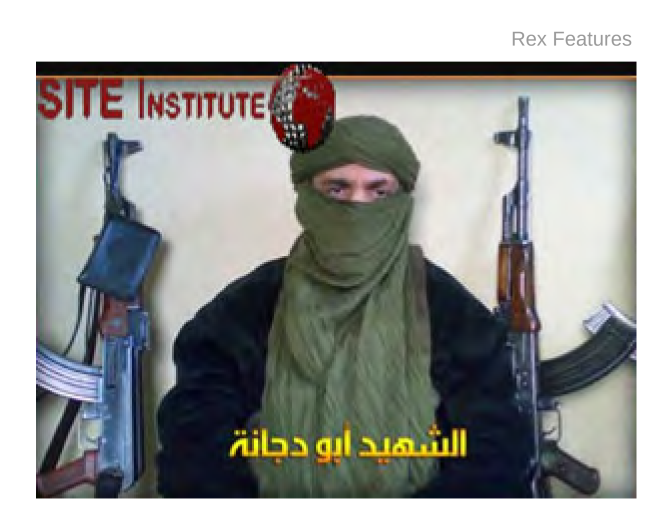
Terrorism

A radical new strategy: kill fewer Muslims

Jun 5th 2008
From The Economist print edition

Al-Qaeda is under fire from inside radical Islam; sadly, the blood may merely flow elsewhere

Rex Features



A BOMB exploded outside the Danish embassy in Pakistan's capital on June 2nd, killing at least half-a-dozen people. The same day another bomb struck a police headquarters in the Iraqi city of Mosul. Just an ordinary start to an ordinary month in this 21st century, you might think. Except that these attacks followed, and some will say belie, a claim the previous week from Michael Hayden, the director of the CIA, that, on balance, America was doing “pretty well” against terrorism.

Needless to say, indignant politicians and pundits pounced on Mr Hayden's remarks, which he made in an interview with the *Washington Post*. The chairman of the Senate intelligence committee complained to Mr Hayden that his interview was inconsistent with the CIA's reports to Congress. Had not last year's National Intelligence Estimate concluded that al-Qaeda had “regenerated” its ability to attack America?

It had. In fairness, however, the CIA director did not say that al-Qaeda had been put out of business. His main point was that it had suffered setbacks in the realm of ideology. “Fundamentally, no one really liked al-Qaeda's vision of the future,” Mr Hayden said. The CIA's claims are no longer universally believed. But Mr Hayden's comments coincide with the publication in a brace of heavyweight American magazines of two lengthy articles by independent researchers, also focusing on what looks like a growing schism within jihadism.

In the *New Yorker* of June 2nd Lawrence Wright, author of an authoritative book on al-Qaeda, concentrates on the recantation of Sayed Imam al-Shareef, alias “Dr Fadl”, a former associate of Ayman al-Zawahiri, Osama bin Laden's deputy. From prison in Egypt, this off-message jihadist has for a period now been taking hurtful ideological pot-shots at al-Qaeda.

Much of this debate among jihadists turns on whether and when Muslim rulers can be deemed apostates and so become legitimate targets. But Mr al-Shareef's quarrel with al-Qaeda goes further. Nothing in Islam, he avers, says that ends can justify means. Nor is killing Christians or Jews allowed unless they are actively attacking Muslims. Furthermore, it is dishonourable of Muslims living in non-Muslim lands to betray their hosts. By these lights, says Mr al-Shareef, the perpetrators of 9/11 were “double-crossers”, having entered America with American visas and so with an implied contract of protection.

Mr al-Shareef's motives are not above reproach. Writing from prison, he may have come under pressure to repudiate his former allies. Part of his animus against al-Qaeda appears to derive from a literary tiff: Mr al-Zawahiri's unauthorised emendation of a gripping tome of Mr al-Shareef's called “The Compendium of the Pursuit of Divine Knowledge”. But Mr al-Shareef's religious scholarship is respected and he commands a following big enough to rattle the relatively uncredentialled Mr al-Zawahiri. That, says Mr

Wright, may be why al-Qaeda's number two felt the need in December to answer a shower of pointed questions on the internet asking why al-Qaeda killed innocent Muslims while claiming to defend Islam.

Mr Wright concludes that radical Islam is facing rebellion from within. The same verdict is reached in the *New Republic* by Peter Bergen and Paul Cruickshank, also respected analysts, who chart a swelling tide of former jihadists now critical of al-Qaeda's promiscuous violence. Such critics, they say, have joined mainstream Muslim leaders in “a powerful coalition countering al-Qaeda's ideology”.

There is no denying that al-Qaeda has damaged its own cause by killing so many Muslims. That is why even Sunni Arabs in Iraq have for now joined the American side. A report from Simon Fraser University in Canada notes an extraordinary drop in support for terrorist groups in the Muslim world.

Too good to be true

And yet the impact of this on global terrorism may, alas, be small. Al-Qaeda has compensated for its strategic setback in Iraq by creating a sanctuary in the tribal areas of Pakistan. As for its ideological problems, these may well be outweighed by the continuing current of anti-Americanism in the Islamic world. Besides, the organisation has a simple remedy. It just needs to kill more Westerners and fewer Muslims. For this it does not have to attract millions of people to its cause: a small number of disaffected souls in the right places is all it takes.

Does it have them? In Britain the domestic intelligence services reckon that up to several thousand people stand ready to carry out violent acts on Islam's behalf—people who are unlikely to change their minds because of a recondite debate on the proprieties of *jihad* conducted from an Egyptian prison. Better still, from al-Qaeda's cynical point of view, would be to mount a big attack on Israel, against which it has so far done little but has lately directed a spate of blood-curdling threats. Sadly, even dissenting jihadists might welcome a bit of that.

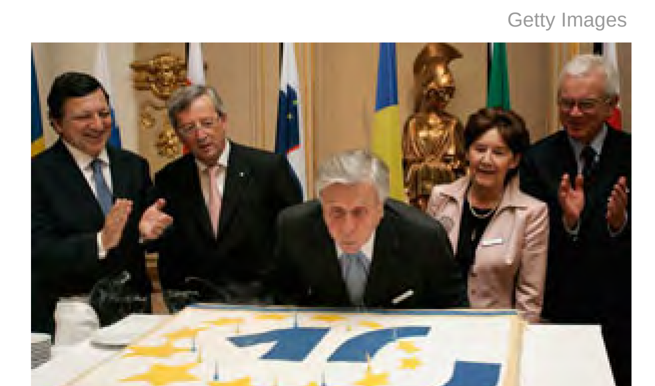
The European Central Bank

Ten years on, beware a porcine plot

Jun 5th 2008
From The Economist print edition

The euro has been a success, but its biggest test is still to come

Getty Images



GIVEN the dark muttering at its birth, the European Central Bank could be forgiven a degree of smugness as it celebrated its tenth anniversary this week. Plenty of economists, especially in Britain and America, predicted that neither the ECB nor Europe's single currency, the euro, would fly. Yet today the ECB's reputation stands sky-high—and the euro rose once again this week on expectations of a rate rise in July.

Partly through luck, but more through skill, the ECB coped strikingly well with the credit crunch. Its hawkishness over inflation has recently been vindicated, too. And contrary to conventional wisdom, the performance of the euro area has broadly matched America's, with similar rates of growth in GDP per person and even more net job creation (albeit with far slower productivity growth). Yet the next decade seems likely to be a lot harder for the ECB and the euro (see article).

Sceptics about the euro insisted that its members did not constitute an “optimal currency area”. Yet they were proved wrong over the efficacy of the ECB, and they seem also to have exaggerated the drawbacks of a one-size-fits-all monetary policy. The United States is probably not an optimal currency area, either; indeed, it suffers from broadly similar internal disparities in both growth and inflation to the euro areas. But America has some big advantages: greater fiscal transfers, a more mobile workforce and more competitive markets, which are essential to economic adjustment in the absence of independent monetary and exchange-rate policies.

Those who hoped for great things from the euro when it was launched argued that it would unleash a wave of competitive, supply-side reforms across Europe. These would both boost the continent's flagging productivity growth and make it possible for the euro-area economies to cope better with the discipline of living inside a single currency. Some countries—Austria, Finland, the Netherlands, to some extent even Germany—duly implemented reforms to make their economies more flexible and more competitive. But others, including France and, especially, the Mediterranean quartet of Portugal, Italy, Greece and Spain (sometimes described as the PIGS), have not done so.

PIGS in a trough

The performance of these countries has by no means been the same. In recent years France has grown modestly, Greece and Spain have boomed, but Portugal and Italy have been stagnant. Yet in broad terms, all have been misled by a similar fallacy. This was that they could make strenuous efforts to qualify for the euro, slashing public spending and holding down wages and other costs, and then relax as soon as they got in. In effect, the Mediterranean group (and, to a lesser degree, France) treated the

adoption of the euro as the end of their reforms, when it should have been only the start.

The results of this are now becoming starkly clear. Although the overall performance of the euro area has been satisfactory, the divergence among its members is growing. Even as Germany, the biggest euro-area economy, has picked up speed, Spain (like Ireland) is suffering a painful property bust. Unit labour costs in all four PIGS have risen, whereas they have fallen in Germany, producing a sharp deterioration in competitiveness and in current-account balances.

The medicine for these ills is simple to prescribe, but painfully hard to administer: structural reforms to deregulate labour and product markets. Such measures should raise productivity growth, but wage restraint will still be needed to restore competitiveness. This is something Germany has borne in the past decade. But there is little sign that any of the PIGS are ready to undergo the necessary pain. Indeed, in a deeper irony, euro membership itself partly protects them from the discipline of the financial markets, which might otherwise be helping to impose reforms.

This should worry those who have been gaily celebrating the ECB's tenth birthday, for two reasons. One is that the economic outlook for the euro area, as for the world economy, is darker than it has been for many years. The other is that the euro remains unloved by most citizens (in opinion polls, less than half consider it to be “a good thing for their country”). Many folk still blame it for raising prices, especially during the introduction of new notes and coins in 2002. It would not be hard for populist politicians in, say, Italy or France to exploit this hostility to launch fresh attacks on the ECB and the euro. That is why the next decade of monetary union is likely to be much more testing than the first.

Behavioural targeting

Not necessarily a bad idea

Jun 5th 2008
From The Economist print edition

A new way to target online advertisements could do a lot of good. But only if it is handled sensitively

Illustration by Otto Detmer



IF YOU are reading this, it is a fair guess that you are interested in advertising, online commerce, internet regulation or online privacy. So it may make sense to display advertisements for computer hardware, software or services alongside the online version of this article. It may be, however, that you are reading this online after scanning a comparative review of flat-panel televisions on a technology blog, or visiting websites for villa rentals in Tuscany—in which case it might make more sense to show advertisements for televisions or villas. Targeting online advertisements at a web user, in short, should work better than targeting them at a web page. That, at least, is the idea behind “behavioural targeting”.

It holds great promise. In theory, the internet ought to lead to far more accurately targeted advertising than other media can. In practice such targeting means working out what a web user is interested in. And therein lies the problem: gathering information and building up profiles, if not done in a sensitive and transparent manner, can look an awful lot like snooping. The ultimate way to work out what someone is interested in would be to intercept his web-browsing traffic and search it for keywords. And that is exactly what companies such as Phorm and NebuAd enable internet-service providers (ISPs) to do (see *Technology Quarterly*). Equipment in the ISP's network scans passing web pages for keywords that are then used to target ads. The ISP then gets a cut when someone clicks on an ad, which is why ISPs are so keen on the technology.

In recent weeks this technique has caused a rumpus on both sides of the Atlantic, however, because it has been deployed in an apparently underhand way. Several American ISPs have quietly switched on NebuAd's system, inserted a brief reference to it in their terms and conditions, and hoped that nobody would mind. Britain's biggest ISP, BT, secretly tested Phorm's technology last year, perplexing some clued-up users who wondered why their traffic was being intercepted. Activists and politicians have questioned whether all this violates privacy or wiretapping laws. Britain's Information Commissioner has warned that such systems should be “opt in”, and in America two congressmen have questioned the “opt out” approach of the NebuAd system that is being used by Charter, the country's fourth-largest ISP.

Attempts to sneak in behavioural-targeting systems through the back door could give a promising idea a bad name. Done properly, behavioural targeting promises to make advertising more relevant for consumers, to increase conversion rates for advertisers and to make online publishers' advertising slots more valuable (since even slots on obscure web pages can have relevant ads placed in them).

Behavioural targeting need not involve the wholesale interception of traffic. A good example is the way Amazon uses customers' browsing and purchase histories on its website to recommend products (customers can erase their footprints if they choose). Large internet portals such as Yahoo! and AOL can generate profiles for users based on their web-mail and browsing, and partner sites can then use that information when deciding which advertisements to display. Similarly, Google can use the stream of keywords typed into its search engine to target advertisements on other sites.

It ain't what you do, it's the way that you do it

But as behavioural-targeting systems become more sophisticated and invasive, it is vital that the companies behind them are open with users about what is going on, and give them control over their personal information. “It's mine—you can't have it,” says Sir Tim Berners-Lee, the inventor of the web, of such information. “If you want to use it for something, then you have to negotiate with me.”

Behavioural-targeting systems that intercept web traffic should be “opt in” rather than “opt out”. Customers may, for instance, be happy to opt in if they are offered a discount on their broadband bills: after all, most web users seem to be willing to reveal some personal information provided they get something in return, such as free web-mail or the use of a search engine. But unless they play fair, the proponents of behavioural targeting risk ruining a promising new idea.

On Chuck Colson, Malthus, Turkey and Armenia, Singapore, baseball, inflation, greenery, Hillary Clinton

Jun 5th 2008
From The Economist print edition

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An insight on Watergate

SIR – I noticed that your review of a biography of Richard Nixon referred to me in a couple of unflattering ways, including the notion that I contemplated firebombing the Brookings Institution ("The fuel of power", May 10th). You need to know, if it ever does any good, that this is untrue. The fellow that testified about it during Watergate has totally recanted.

It is not true that I ever urged or suggested it. It was the idea of one Jack Caulfield, who told me about it in the White House men's room, and I told him he was crazy. Mr Caulfield called me one day and said he wanted to make amends; that I had been unfairly treated, and he was sorry. He later confirmed this to Jonathan Aitken, who wrote a biography of me. I don't know if it does any good to try to change these things now, but that is the fact.

Chuck Colson
Lansdowne, Virginia

Echoing the past

SIR – You pointed out that Malthus had the misfortune of writing at an historical turning point, and that, although his ideas accurately described the past, they were soon contradicted by the emergence of the industrial revolution (Economics focus, May 17th). Do you not risk a similar fate when you go on to extol the limitlessness of human ingenuity, even though we are starting to witness Malthusian limits? Such optimism, which itself is based on past experience, seems to risk a more dangerous heresy, which does not bode well for future generations.

Adam Signatur
Chicago

Turkish-Armenian relations

SIR – It is very good to read ("A Caucasian cheese circle", May 24th) that Turkish and Armenian businessmen are trying, across their closed border, to get something going, even if just a symbolic joint cheese (it is a species of Gruyère, apparently introduced in tsarist Russian times, and not bad).

They need each other. North-eastern Turkey has been doing better in the past few years because of the Baku pipeline and the proposed Kars-Tbilisi-Baku railway line, but would do better still if trade could be properly opened up. On its side, Armenia is a landlocked little country with a GDP per head one-quarter that of Estonia and which has seen a precipitous decline in population since independence (some of it through migration to Istanbul). Co-operation makes obvious sense.

However, the Armenian diaspora has poisoned the relationship by its endless insistence on having this or that foreign legislative body, from Congress to Cardiff city council, "recognise" as "genocide" the tragic events of 1915. But the great bulk of specialists in the time and region, starting with Bernard Lewis at Princeton, are sceptical as to whether "genocide" is the right word for a tragedy in some degree provoked by the Armenian nationalists of the time. The most succinct statement of the problem comes in "The Chatham House Version" by the late Elie Kedourie of the London School of Economics. This is, as the Turkish government says, an historical matter that should now be left to historians. I am certain that Armenian businessmen, desperately anxious for better relations with Turkey, entirely agree.

Norman Stone
Oxford

Singapore's currency

SIR – I would like to clarify a remark you made about Singapore's exchange-rate policy ("Structural cracks", May 24th). The Singapore dollar is managed against a trade-weighted basket of currencies of our biggest trading partners, and is neither managed nor pegged (as is the case with the Hong Kong dollar) to the American dollar. The trade-weighted Singapore dollar is allowed to fluctuate within a policy band that is consistent with economic fundamentals, with the aim of achieving sustained non-inflationary growth over the medium term. This has been our monetary policy framework since 1981. In choosing the exchange rate as the intermediate target of monetary policy (in the context of completely free capital mobility in and out of Singapore), domestic interest rates are determined by market forces and not as a result of discretionary policy actions.

Angelina Fernandez
Director of communications
Monetary Authority of Singapore
Singapore

The other team

SIR – Your article about the acquisition of Wrigley stated that "Wrigley Field is the home stadium of the local baseball team, the Cubs" ("A sugary mouthful", May 3rd). The Cubs are only one local baseball team. Though Chicago White Sox fans are accustomed to such slights, we are less inclined to take them lying down since winning the World Series in 2005.

Paul Alvarez
Evergreen, Colorado

Inflationary pressures

SIR – Your briefing on rising inflation implied that developed economies will escape the inflation scourge that is hitting emerging markets ("An old enemy rears its head", May 24th). But for how long? For different reasons China and Russia are pursuing growth as their main priority. They can do this because they can now afford it. If central banks in developed countries follow the same policy prescription then rising export prices will pass through to their inflation. The developed world's central banks are the only parties with a realistic chance of slowing down the global inflationary momentum. Whether they will rise to this challenge and put price stability over growth is still very much in doubt.

Larry Brainard
Chief economist
Trusted Sources
London

Green IT

SIR – Your article on the growth of carbon emissions from data centres implied that simply buying more energy-efficient kit is a way to address emissions associated with information technology ("Buy our stuff, save the planet", May 24th). Be careful, though, not to ignore the "locked-in" carbon costs of new IT purchases.

Many IT products consume more resources during their manufacture than over their productive lifetime. The average personal computer takes 1,500kg (3,300lb) of water, 22kg of chemicals and 240kg of fossil fuels to produce. Much better to develop a "whole life" approach to making and running equipment, so that the true carbon cost of IT goods can be adequately measured and reduced.

Dinah McLeod
Head of sustainability practice
BT Global Services
London

The never-ending story?

SIR – If, as you assert, Appalachia could be Barack Obama's “Achilles heel”, then I suggest Hillary Clinton may yet prove to be the Democrats' Dido: the spurned queen whose enduring legacy was generations of bitter warfare (“Close but no cigar”, May 24th).

George Kovac
Coconut Grove, Florida

China, India and climate change

Melting Asia

Jun 5th 2008 | BEIJING, DELHI AND TIBET
From The Economist print edition

China and India are increasingly keen to be seen to be tackling climate change; though it is dirtier, China is making a more convincing show of action

EPA



SINCE 2006 the railway line across the Tibetan plateau (above) has been carrying passengers and freight across a landscape of snow-covered peaks and tundra, antelopes and wolves. China celebrates it as one of the nation's greatest technological feats. But some experts worry that global warming may render it useless.

The impact of warming can be seen on a road that runs parallel to the line for much of its length. Trucks bump along its cracked and undulating surface, which is being ravaged by the freezing and thawing of the tundra beneath. Since the highway was built in the 1950s, the permafrost area has been shrinking and the layer above it, which is subject to seasonal thaw, has been getting deeper. The railway is vulnerable to the same process.

The vast and sparsely populated Tibetan plateau is the origin of the great river systems of China, South-East and South Asia: the Yangzi and Yellow Rivers, the Brahmaputra, the Indus, the Mekong and the Salween. The Ganges rises on the Indian side of the plateau's Himalayan rim. These rivers, fed by thousands of Himalayan glaciers, are an ecological miracle. They support some 1.3 billion people.

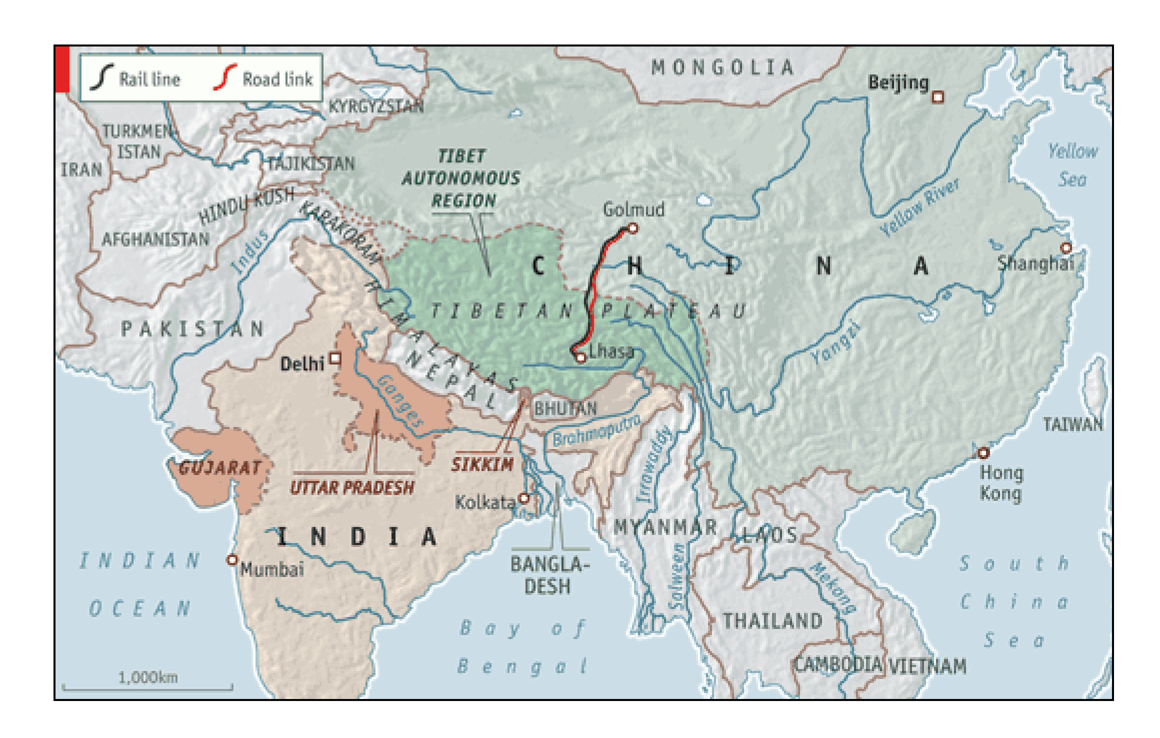
But the glaciers are retreating. Chinese experts predict that by 2050 the icy area on their side of the Himalayas will have shrunk by more than a quarter since 1950. Predictions for the Indian side are gloomier still. In April a leading Indian glaciologist, Professor Syed Iqbal Hasnain, measured the East Rathong glacier in lofty Sikkim state. It appeared to have shrunk by 2.5km, or half its length, in a decade.

The average global temperature increase of 0.6°C in a century seems an insufficient explanation; but that may combine with a 3km-thick fug of pollution, known as Asian Brown Cloud, that hangs over northern India. Scientists think this haze, which is created by power stations and cooking-fires, may be radiating heat into the lower troposphere, at altitudes in which glaciers are found. Mr Hasnain estimates that Himalayan glaciers will be gone in 20-30 years. That would leave many great rivers depending on seasonal rainfall. According to the Intergovernmental Panel on Climate Change (IPCC), this may be the fate of the Indus, Ganges and Brahmaputra by 2035. Making matters worse, changes to the weather may meanwhile make the rains less reliable.

North India has two main weather systems. In the summer, south-westerly monsoonal winds reach northern India, in an explosion of heat-busting rain, in late June. During the winter, westerly winds blow

rain-clouds across Pakistan and northern India, watering the plains and dumping snow onto the tops of the Hindu Kush, Karakorams and western Himalayas.

These systems are liable to change with the climate; some scientists think the Westerlies have been disrupted already. This might explain why India's winter rains were poor this year; but May delivered a drenching. With 168mm of rainfall, Delhi had its wettest May on record. In Uttar Pradesh state, two storms killed 120 people. With seasonal rivers and sporadic rains, India's ecological miracle would become an ecological calamity.



Now that the American presidential race is down to two candidates who are both committed to cutting emissions, China and India, the world's most populous nations, are seen by many as the world's biggest climate-change problems. Russia's economy is more profligate with energy, but China is widely believed to be the world's biggest emitter of carbon dioxide, and India is rapidly moving up. Their exploding emissions are America's main excuse for failing to take action itself; and their intransigence exasperates those trying to negotiate a global agreement on climate-change mitigation to replace the Kyoto protocol. Meanwhile, both countries are awakening to the problems that climate change will cause them.

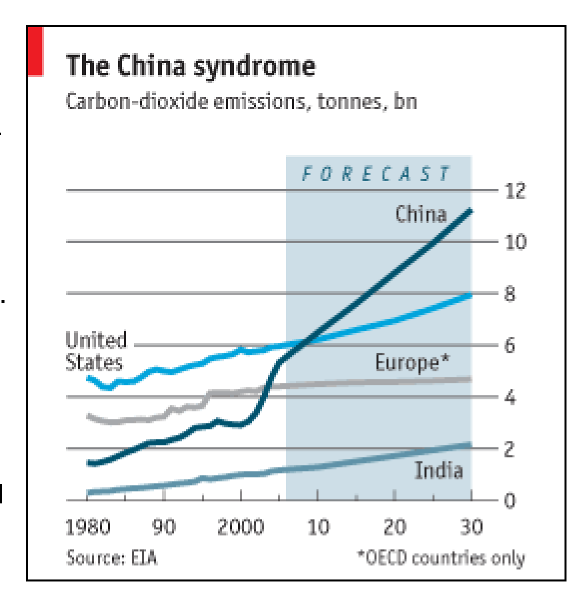
In the past couple of years, Chinese officials have begun sounding like converts to the climate-change cause. In late 2006 12 ministries helped produce a 415-page report on the impact of global warming. It foresees a 5-10% reduction in agricultural output by 2030 (a shift from previous thinking on this among Chinese academics which held that global warming might benefit agriculture overall); more droughts, floods, typhoons and sandstorms; a 40% increase in the population threatened by plague. The report also admits the possibility of damage to the Tibetan railway. Last year China published its first policy document on climate change, admitting that coping with global warming presented “severe challenges”.

China also now admits its own contribution to the problem. Officials reacted frostily last year when the International Energy Agency, a rich-country think-tank, said China would overtake America as the world's biggest emitter of greenhouse gases in 2007 or 2008. But the Chinese commerce ministry's website now carries, without negative comment, an article from April this year quoting University of California researchers saying China is already number one.

The impact of climate change on India, a hotter and poorer country, is likely to be worse. According to the Peterson Institute for International Economics, India's agriculture will suffer more than any other country's. Assuming a global temperature increase of 4.4°C over cultivated areas by 2080, India's agricultural output is projected to fall by 30-40%.

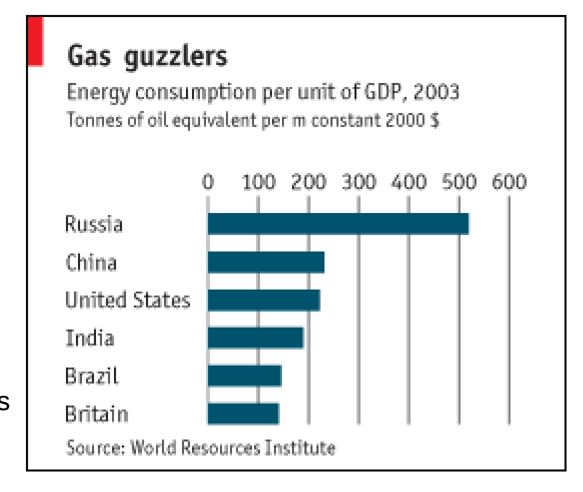
Yet India's response to this doomful scenario has been, at best, haphazard. For example, it has made only occasional studies of 11 Himalayan glaciers. It has also shown little concern for the regional political crisis that climate change threatens. As sea-levels rise, for example, the IPCC warns that 35m refugees could flee Bangladesh's flooded delta by 2050. Yet even in India, attitudes are changing.

Manmohan Singh, its sagacious prime minister, has formed a powerful council of ministers, bureaucrats, scientists and businessmen to co-operate on the issue. It has rarely met; yet it is part of a broader push that has sparked a flurry of climate-related initiatives: to boost energy efficiency, improve seed types, encourage forestation and so on. Given India's historic problems with flooding and drought, many of these are built upon existing policies. Indeed, the government claims that 2% of GDP is being spent on coping with climate-induced problems. To display these efforts, and manage them better, India is due this month to unveil a vaunted policy, the National Action Plan on Climate Change.



It will be welcome; because many consider that India is expending even greater effort on justifying its refusal to control its emissions. In particular it argues that its total emissions are relatively low (see chart above) and that it is relatively energy-efficient (see chart below). China uses far more energy than it does per unit of GDP; Russia, vastly more.

The reasons for India's frugality are not all that creditable. Almost half the population has no access to electricity. Also, India cross-subsidises power and petroleum products: farmers get cheap electricity, for instance, while industry pays more for it. This is one of many government-imposed hardships that have forced Indian firms to use power and other resources efficiently. As a result, India is one of the world's lowest-cost producers of aluminium and steel.



During the past four years both China's GDP and its energy consumption have grown at an average of 11% a year. India's GDP, meanwhile, has grown at an annual average of 9% while its energy consumption has risen by 4%. And yet, to achieve its target of long-term 8% growth, India will have to boost its power-generation capacity at least sixfold by 2030. Over the period, its emissions are expected to increase over fourfold.

India defends this on moral grounds: its people have the same right to wealth as anyone. Indeed, given their special vulnerability to climate problems, they have a particularly urgent need for economic development. After all, a factory worker with an air-conditioner will feel global warming less than a subsistence farmer will.

This position is also consistent with the UN Framework Convention on Climate Change, which launched the Kyoto process, and recognised that economic development and poverty eradication were the “overriding priorities” for developing countries. The Bush administration's bid to override this principle by refusing to undertake targeted emissions cuts unless India and China accept comparable cuts has therefore caused fury in India. A senior official in the foreign ministry characterises America's line as: “Guys with gross obesity telling guys just emerging from emaciation to go on a major diet.”

India has entered negotiations to replace the Kyoto protocol, which expires in 2012, in the same spirit. Indeed, Chandrashekhar Dasgupta of the Energy and Resources Institute, who was involved in negotiating the Framework Convention and also the blue-print for the current negotiations, which is known as the Bali Action Plan, says it is a “mischievous mis-statement” even to speak of the protocol expiring. Indian officials consider that the negotiations are to refresh, not replace, the protocol, mainly by imposing more ambitious reduction targets on rich countries.

This would make an IPCC target of reducing global emissions by 25-40% by 2020 unrealisable, which is why India's negotiators insisted that the target be removed from a draft of the Bali Action Plan. Supported by other developing countries, they also watered down the draft's most radical feature: a pledge by developing countries to undertake “measurable, reportable and verifiable” efforts to cut their emissions. At India's instigation, the paragraph in which this phrase appeared was reshuffled, leaving its meaning unclear.

With such tough tactics, India has acquired an ugly reputation on the global front against climate change. Among big countries, perhaps only America and Russia are considered more obdurate. Although China has shown no inclination to commit to specific emissions-cutting targets in the post-Kyoto discussions, some Chinese academics familiar with the process say that after China reaches a certain per head emissions level it might agree to cut emissions. It is anxious not to be cast as a global-warming villain, particularly given pressures mounting on it over issues ranging from trade to Tibet. China is looking to America for its cue. If America commits itself to carbon cuts, China will feel obliged to make some kind of promise too.

Many see India as unhelpful by comparison. Almost nothing could annoy India more. Partly in response, perhaps, Mr Singh has shown some flexibility. At a G8 summit in June last year, he pledged that India's carbon-dioxide emissions per head would never exceed developed countries'. In effect a challenge to the industrialised world to cap India's emissions by curbing their own, this was more imaginative than has been widely recognised. And yet China is perceived to be taking the problem more seriously than India. This is partly because China is doing a lot to try to curb its energy use—but for reasons that have nothing to do with greenhouse gases.

Jia Feng of the Ministry of Environmental Protection says the country's chief concern driving energy policy is security. Imports supply only 10% of China's total energy demand (70% of which is met by coal), but oil is essential for transport. Lacking the military power to protect far-flung sea lanes, China feels vulnerable.

Next on its list of worries is local pollution caused by sulphur dioxide, atmospheric particulate matter and wastewater. Acid rain affects a third of China's land and hundreds of thousands of people die from pollution-related cancer every year. Industrial filth has sparked protests.

A slogan for the planet

The government is trying to curb the use of fossil fuels and promote renewable energy. In 2006 it announced plans to cut the amount of energy consumed for each unit of GDP. The goal is to reduce energy intensity by 20% by the end of the decade. “Save energy, cut emissions” is now one of the party's favourite slogans. Boosting energy-efficiency and the use of renewables not only helps secure energy supplies and cuts local pollution, but also helps keep carbon emissions in check too.

Amid the recent global upsurge of climate-related anxiety, China's leaders have spun its energy-efficiency drive as greenery. In its first published policy paper on energy, which came out last year, the government said it aimed to cut greenhouse gas emissions; and the Beijing Olympic games are to be a showcase for China's new-found greenery. The first “carbon neutral” summer games involve solar power aplenty, tree-planting, banning many cars from the streets and “reducing emissions from enterprises” (temporarily shutting many of them down, presumably). The games, say officials, will produce 1.18m tonnes of CO_2 and the countermeasures will save 1.03-1.30m tonnes.

The energy-efficiency drive is spreading out from Beijing. Provincial leaders are required to meet “save energy, cut emissions” targets in order to gain promotion. Of 800 county-level party chiefs questioned in an official survey published in May, a surprising 40% said meeting environmental protection goals should be a critical determinant of their careers. Fewer than 2% said meeting economic growth targets should be given such a priority.

Still, the goal of achieving a 20% reduction in energy intensity by 2010 seems a long way off. In 2006, the first year of the campaign, it fell by only 1.3% and last year by around 3.3%. To meet the target it would need reductions averaging 5% for each of the next three years. It will be hard to do this while holding down energy prices. Academics at the Development Research Centre, an official think-tank, recently said a 15% increase in energy prices by 2010 would promote “conspicuous energy savings”. But the party's political will has its limits. For all its eagerness to save energy, it fears higher prices could stoke inflation and regime-threatening protests.

But China is making considerable efforts to boost the amount of energy produced by non-fossil fuels. By 2020 the aim is to generate 15% of energy from renewable sources, up from around 7% in 2005. This is a big step up from the previous goal of 10% by 2020. China's investment in renewable energy last year, about $10 billion, was second only to Germany's.

Still, even if China meets this target, carbon emissions will continue growing rapidly too. The biggest

concern among climate-change activists around the world is the impact of Chinese coal—and also Indian coal. China and India have the world's third and fourth biggest coal reserves; though much of India's is currently out-of-bounds, under protected forests and human settlements. Both countries are meanwhile trying to develop their renewables sectors. For example, India is the world's fourth-biggest producer of wind power. Its solar yield is also bigger than any country except America. Still, in the coming decades, both countries will remain heavily dependent on coal.

Which is why rich-world climate activists are placing their faith in two factors that appeal to India's and China's self-interest. The first is the Clean Development Mechanism (CDM), a scheme whereby companies in rich countries outsource their obligation to cut carbon emissions, by sponsoring carbon-cutting schemes in poor countries. The CDM both allows emissions to be cut efficiently, because reductions take place where they can be made most cheaply, and offers developing countries an incentive to clean up.

China, which has put a lot of government effort into it, has done far better than India out of the scheme. Last year China made more money than any other country out of rich-world polluters—$5.4 billion, or 73% of the total. India, which, along with Brazil, came second, made $445m, 6% of the total. There are, however, question marks over the future of the scheme, because some rich-world businesses and politicians are beginning to argue against handing over such large sums of money to Asia. China, meanwhile, says that it needs not just money but also clean technology, and accuses rich-countries of being tight-fisted with their intellectual property.

The second factor that may encourage China and India to become greener is the growth of indigenous alternative-energy companies. There, both China and India can claim some remarkable successes.

China's Suntech, which was founded in 2001, is the third-largest manufacturer of solar cells in the world. India's Suzlon Energy is one of the world's five biggest makers of wind turbines; 15 years ago it was a modest Gujarati textiles firm. Both countries have innovative companies hungry to make money abroad and in growing local markets. As such firms grow, so will the volume of calls for more climate-friendly policies in China and India.

This is good. And yet, at a time of fast-melting glaciers and strange rains, of spreading deserts and rising seas, it is a frail and distant promise. As China and India awaken to climate change, few of their leaders and thinkers seem to expect a more solid solution: an ambitious replacement, or refreshment, of the Kyoto protocol. Such an accord would have to involve more specific commitments from China, India and other developing countries. But it would depend, first of all, upon binding action by the developed world.

The primaries

Over at last

Jun 5th 2008 | SIOUX FALLS
From The Economist print edition

Barack Obama is the Democratic nominee. But it's a long way to the White House

Illustration by Kevin Kallaugher



AFTER 16 arduous months, the race for the Democratic nomination is over. On June 3rd, after winning Montana, losing South Dakota and capturing a fresh gaggle of superdelegates, Barack Obama declared victory. If he beats John McCain in November, he will be America's first black president. His supporters, already quite excited about their candidate, surrendered to the ecstasy of the moment.

Mr Obama did nothing to dampen their enthusiasm. "[G]enerations from now, we will be able to look back and tell our children that this was the moment when we began to provide care for the sick and good jobs to the jobless; this was the moment when the rise of the oceans began to slow and our planet began to heal; this was the moment when we ended a war and secured our nation and restored our image as the last, best hope on Earth," he told a vast, roaring throng of fans in St Paul, Minnesota. A little self-aggrandising, perhaps, but they loved it.

His supporters, of course, have loved him all along. Mr Obama has raised more money than any primary candidate ever. In every state, even the ones he lost, he has attracted colossal, euphoric crowds while his rivals in both parties have had to make do with small, polite ones. The only danger is that among those supporters, he has raised expectations so high that he cannot plausibly fulfil them. "He's bringing a new generation; a better generation," says Tiffany Harris, a 19-year-old waitress in South Dakota. She then indicates her pregnant stomach and gushes: "It's like, I'm bringing a new generation, and he's doing that too."

Hillary Clinton never knew what hit her. On the last day before the last primaries, she looked spent. Twice during speeches in South Dakota, she lost her voice. Coughing and slightly teary, she had to stop and drink water while her daughter took over the microphone. At a fairground in Sioux Falls, a hefty chunk of the audience wandered off before Mrs Clinton's speech was over.

Though Mr Obama's supporters are palpably more passionate than Mrs Clinton's, his margin of victory was narrow. In the 56 primaries and caucuses, he won 1,767 delegates to her 1,640. Among the 823 unelected superdelegates (party bigwigs with ex officio votes), Mr Obama leads by 415 to 282, with 130 yet to declare. His total, 2,181, is well over the required 2,118.

The narrowness of the margin has made it hard for the Clinton camp to accept defeat. On the night Mr Obama declared victory, Mrs Clinton refused to concede: indeed, in a speech that missed a fine opportunity to be statesmanlike, she sounded defiant to the point of delusion. She boasted that she won more of the popular vote than him, which is true only under Clintonian assumptions and irrelevant besides. "In Defeat, Clinton Graciously Pretends to Win," mocked a headline in the *Washington Post*. But after a day of intrigue, it looked likely that her concession would take place on June 7th.

It is theoretically possible that the superdelegates who have announced their support for Mr Obama could change their minds before the convention in August and hand the nomination to Mrs Clinton. But it is vanishingly improbable, barring the revelation that Mr Obama is secretly a polygamous Mafia boss in the pay of Iran.

More likely, she is angling for the vice-presidency. But she probably won't get it, not least because the White House would be awfully crowded with both Clintons back in it. There are other, easier ways for Mr Obama to strengthen his appeal to the working-class voters who pointedly preferred Mrs Clinton to him during the primaries. He could offer the second slot to the governor of Ohio, Ted Strickland, for instance, or to Ed Rendell, who governs equally-crucial Pennsylvania.

Now for the general

The battle between Mr Obama and Mr McCain is now on. It might, conceivably, be civil—Mr McCain has invited Mr Obama to hold joint town-hall meetings with him, where both men answer whatever questions the audience tosses at them. But it will also be heated, and filled with distortions. Mr McCain congratulated his opponent but said he was surprised that such a young man should subscribe to so many bad old ideas, such as that government is the answer to every problem. Mr Obama retorted that Mr McCain offers four more years of President George Bush's economic failures and 100 more years in Iraq. Both were unfair.

Given the war, the economic gloom and the wind at the Democrats' backs, Mr Obama ought to win easily in November. But first he must unite behind him a large portion of those who voted for Mrs Clinton. That will not be easy. Consider the example of Kathy Nicolette, a former teacher who thinks teachers are underpaid and oil firms to blame for petrol prices so high she may have to walk to work. She supported Mrs Clinton. But if Mr Obama is the nominee, she says she will vote for Mr McCain.

Sitting with her dogs by the waterfall for which the city of Sioux Falls is named, Ms Nicolette explains that she rather liked Mr Obama when he first appeared on the scene. She read his autobiography and was impressed. But she has grown to distrust him. His relationship with his former pastor, Jeremiah Wright, appals her. "I can't imagine how he listened to a guy saying 'God damn America' for 20 years and only now he distances himself," she says. Many so-called Reagan Democrats will share her sentiments.

Come November, writes Dick Morris, a disaffected former aide to Bill Clinton, "Obama will still be black and the Rev Wright will still be nuts." Charlie Cook, a more neutral analyst, takes a more nuanced line. Mr Obama's problem is not just racial, he says. Many Americans, particularly older ones, are uncomfortable with his exotic background. If his name was Smith and he had grown up entirely in America (rather than partly in Indonesia) they might find it easier to relate to him. Mr Obama's challenge is to refute the false rumours swirling around the internet—that he is a Muslim, that he sympathises with terrorists—and make suspicious voters feel comfortable with him. If he can do that, he will win, says Mr Cook. If not, he won't.

Puerto Rico

Her last hurrah

Jun 5th 2008 | SAN JUAN
From The Economist print edition

Islanders have their tiny say

AP



Hasta la vista

HILLARY CLINTON'S *caravana*, a line of cars that drove through Puerto Rico on May 31st, forced bystanders to behold and be deafened. Thirty-two speakers blasted a salsa tune, “Hillary Clinton *pa' presidenta*”. A flatbed truck carried reporters like hogs in a pen. Perched on a pickup was Mrs Clinton herself, campaigning like a true *Boricua* (Puerto Rican) for six hours. Some people greeted her with campaign signs. Others gazed at her, bewildered.

Mrs Clinton's quest for the Democratic nomination took her to many distant corners, but the least expected may have been Puerto Rico, a semi-independent commonwealth that does not participate in America's general election. For Mrs Clinton, the strong favourite, the primary on June 1st was a chance to show her support among Hispanics and to boost her claim to the popular vote. For Puerto Ricans, the primary was a chance to make their voices heard on the mainland. “Nobody stays home,” shouted Roberto Prats, the local Democratic chairman, at a rally for Mrs Clinton on May 30th. “We are going to write a new page in history!”

But Puerto Ricans did stay home. Though Mrs Clinton beat Barack Obama by 68% to 32%, just 16% of voters went to the polls, compared with the 80% who usually vote in the island's own general elections. Mrs Clinton's claim to the nomination was not improved: a higher turnout could have made her claim to a popular-vote victory unarguable. And Puerto Ricans' relationship to America was shown to be as confused as ever.

Mrs Clinton tried to engage Puerto Ricans with her usual wonkiness, charm and superhuman stamina. Together, the Clintons visited more than 40 Puerto Rican towns. The lovely island has ugly problems, including a poverty rate more than twice that of America's poorest state, Mississippi. Mrs Clinton promised to let Puerto Ricans receive the full benefits of social programmes such as Medicare and Medicaid, and to extend more tax credits for economic development.

But her campaigning was eclipsed by a simple fact: Puerto Rico's role within American politics remains hopelessly muddled. The United States won the island from Spain in 1898. Today, 110 years later, Puerto Ricans' ties to the mainland are still fraught. Since 1952 the island has been a commonwealth. Puerto Ricans can vote in presidential primaries, but not the election itself. They serve in the armed forces, but have no vote in Congress. They enjoy some federal programmes, but pay no federal income tax. The “status issue” is a blood sport. Local parties are defined by those who want to become a state, those who

want an “enhanced” commonwealth and a minority who demand full independence from America.

Mrs Clinton declared herself neutral (Mr Obama did too) and said that the Puerto Ricans should decide their own fate. She promised to give them the right to vote for the president and to help them resolve the status issue within her first term.

Puerto Ricans' state of political limbo was reflected in their attitude to the primary. Some voted eagerly. Christian Ojeda of Isabela, a city in the north-west, rushed to his polling station at 8am only to find a queue of equally excited voters. Others protested against the election being held at all. In Old San Juan *independistas* marched with a banner that read, “USA: Invaders Go Home”. But most parts of the island took no notice. At a polling station in Cayey, tucked in the green hills of the Cordillera Central, two policemen stood idly, there to control crowds that never came.

Still, the primary did spur a bit of action among party leaders, with commonwealthers and statehooders, as they call themselves, joining temporarily to back one or other American Democrat. José Alfredo Hernández Mayoral, a leader of Mrs Clinton's local campaign, insisted that the election was “a reminder to everyone in the United States that we exist, that we are citizens and that we have issues we want to resolve with them.” Since most mainlanders rarely concern themselves with Puerto Rico's status, the primary at least sprinkled a few drops of attention on an island thirsty for it.

The post-mortem

The fall of the House of Clinton

Jun 5th 2008 | WASHINGTON, DC
From The Economist print edition

Hillary Clinton has seen a nomination that was once hers for the taking slip from her grasp. How could it have happened?

AP



THIS time last year it looked as if Hillary Clinton's path to the Democratic nomination would be a cakewalk. She had the best brand-name in American politics. She controlled the Democratic establishment. She had money to burn and a double-digit lead in the opinion polls. And as the first American woman to have a chance of breaking the presidential glass ceiling, she had a great story to tell.

And Barack Obama? He was a first-term senator with few legislative achievements and a worrying penchant for honesty (in his autobiography he admitted to using marijuana and even cocaine, "when you could afford it"). He knew how to give a good speech. But how could that compare with Mrs Clinton's assets—a well-oiled political machine and a winning political formula that combined a carefully-calibrated appeal to the centre with hard-edged political tactics?

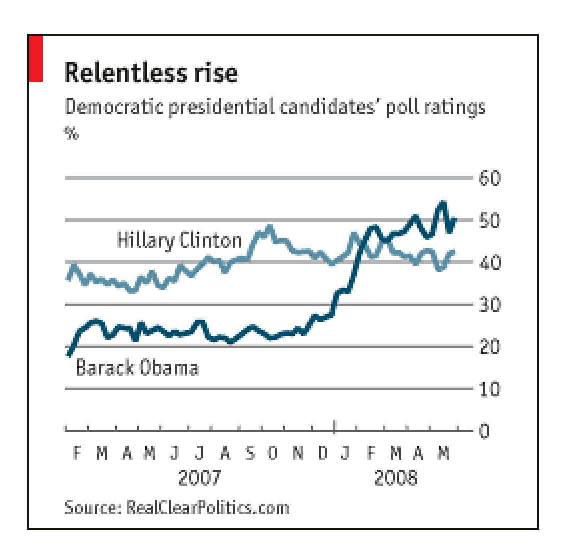
Today, Mrs Clinton has not only lost the Democratic nomination. She has humiliated herself in the process. She has been forced to lend her campaign more than $11m of her own money. She has cosied up to some of her former persecutors in the "vast right wing conspiracy", notably Richard Mellon Scaife, a newspaper magnate. She has engaged in phoney populism, calling for a temporary break on petrol taxes, praising "hardworking Americans, white Americans", vowing to "totally obliterate" Iran and waving the bloody shirt of September 11th. The conservative *Weekly Standard* praised her as "a feminist form of George Bush". So how did one of America's most accomplished politicians turn a cakewalk into a quagmire?

From the first most of her biggest advantages proved to be booby-trapped. Mrs Clinton stood head and shoulders above Mr Obama when it came to experience—she had been one of the two most influential first ladies in American history and had proved to be a diligent senator, a "work-horse, not a show horse". But Mrs Clinton's "experience" included her decision to vote in favour of invading Iraq, a decision that was radioactive to many Democrats. And Mr Obama was the first to grasp that this is an election about change, not experience. Americans have had enough of experience in the form of Dick Cheney and Donald Rumsfeld. Seventy per cent of them say America is headed in the wrong direction.

The Clinton machine only exaggerated this problem. Mrs Clinton surrounded herself with familiar faces from her White House years—people like Mark Penn, her chief strategist, Terry McAuliffe, her chief fund-raiser, Howard Wolfson (one of the least helpful spokesmen this newspaper has ever encountered) and, of course, her husband. But these people were all deeply enmeshed in a Washington establishment that most voters despised.

Mr Penn, one of Washington's most powerful lobbyists, continued to lobby for a free-trade deal even as Mrs Clinton was trying to

appeal to blue-collar voters by denouncing free trade. These people also summoned up uncomfortable memories from the 1990s. Did America really want to spend another four, or eight, years watching Mr McAuliffe et al catching flack on behalf of the Clintons? “Everybody in politics lies”, David Geffen, a Hollywood mogul, said last year. But the Clintons “do it with such ease, it's troubling”.



Bill Clinton was the very embodiment of the Clinton paradox: a huge asset who was also a huge liability. Mr Clinton is a political superstar—a man who left office with a 60% approval rating and a claim to have delivered eight years of peace and prosperity. Most Democrats love him. But he is also a cad and a narcissist.

His presence on the campaign trail reminded voters that Mrs Clinton is hardly a self-made woman—she rose to power on his coat-tails and endured repeated humiliations in the process. It also undercut her claim to executive experience. Mrs Clinton had made a mess of the health-care portfolio that her husband had handed her in 1993. And it raised the question of what Mr Clinton would do in the White House. Would he be an unelected vice-president? And would he re-establish the dysfunctional politics that had characterised the presidency in the 1990s?

You're out of time

The Clinton machine was too stuck in the 1990s to grasp how the internet was revolutionising political fund-raising. Mrs Clinton built the best fund-raising machine of the 20th century—persuading Democratic fat cats to make the maximum contributions allowable and accumulating a vast treasure trove of money. But Mr Obama trumped her by building the best fund-raising machine of the 21st century.

Mr Obama simultaneously lowered the barrier to entry to Obamaworld and raised expectations of what it meant to be a supporter. Mr Obama's supporters not only showered him with small donations. They also volunteered their time and enthusiasm. His website was thus a vast social networking site (one of his chief organisers was a founder of Facebook)—a mechanism not just for translating enthusiasm into cash but also for building a community of fired-up supporters. Mr Obama's small donations proved to be a renewable resource, as supporters could give several times, up to a maximum of $2,300. Mrs Clinton ran out of cash.

The Clinton machine was also too stuck in the 1990s to see how radically the political landscape was changing around them. Here Mr Penn—the campaign strategist who helped to mastermind Bill Clinton's re-election triumph in 1996—was particularly culpable. Mr Penn underestimated Mr Obama's appeal. He relied on the techniques that had served him well in 1996—microtargeting small groups of voters (he even published a book during the campaign on “microtrends”) and emphasising Mrs Clinton's middle-of-the-road credentials. But this was a big-trend election—and the biggest trend of all was changing the status quo in Washington.

These strategic errors probably doomed the campaign from the first. The Clintonites were so confident of an early victory that they spent money like drunken sailors (one of the biggest beneficiaries of all this spending was Mr Penn's own political consultancy). The campaign was all but bankrupt by late January—though Patti Solis Doyle, the campaign manager, failed to tell her boss the bad news—and the Obama campaign outspent them two or three to one on Super Tuesday, February 5th. The machine was so confident of victory in the big states such as California, Ohio and Pennsylvania that it failed to plan for the smaller caucus states, or for the primaries and caucuses that were to follow immediately afterwards. Mr Obama was thus given free rein to rack up huge victories in places like Virginia. After Super Tuesday, Mr Obama scored a series of 11 wins in a row. Without those, he would never have secured the nomination.

These grand strategic errors were compounded by poor day-to day management. The people who introduced the “war room” to American politics proved to be slow-witted and gaffe-prone. Remember Bill Clinton's decision to belittle Mr Obama's victory in South Carolina by pointing out that Jesse Jackson had also won the state? The only logical implication of that was the slur that a black candidate somehow could not win. Or Mrs Clinton's claim that she dodged sniper fire in Bosnia? The Clinton machine all but fell apart under the pressure of defeat. Rival factions, grouped around Mr Penn and Harold Ickes, were

constantly at each other's throats. Mrs Clinton was forced to sack Mrs Doyle and marginalise Mr Penn.

This chaos left Mrs Clinton without a compelling story to sell to the Democratic electorate. She tried fitfully to co-opt Mr Obama's "change" message. She alternated between being an iron lady, ready on day one, and a put-upon woman, bullied by mean boys. She reinvented herself as a working-class hero, Rocky in a pantsuit. But this created an impression of slipperiness and opportunism. In some states half of the voters said that Mrs Clinton was not honest.

The chaos also gave the Democratic establishment a chance to ditch the party's first family. Many Democratic politicians had always disliked the Clintons for handing Congress to the Republicans in 1994 and triangulating their way out of trouble. They were only willing to stick with them as long as they looked like winners. Ted Kennedy's decision to anoint Mr Obama as the heir to the legacy of Camelot was an important symbolic moment ("this election is about the future, not the past", he said pointedly.) But even before that a striking number of superdelegates had been unwilling to endorse a woman who was supposed to be the inevitable candidate. The silence of Al Gore, Mr Clinton's vice-president, spoke volumes.

A near-run thing

The Clinton campaign might well reply that this catalogue of failures ignores the fact that it was a very close run result. Mrs Clinton won almost exactly the same number of votes as Mr Obama (and claims to have won slightly more, though on a fair count she won fractionally less). She won most of the big states. She improved hugely as a campaigner after the reverses of February, and pulled off big victories in the final weeks of the campaign.

But given the scale of her advantages a year ago there is no doubt that the Clinton campaign comprehensively blew it. Mr Obama will now go on to fight the general election with his primary strategy vindicated and his campaign staff intact. Mrs Clinton has big debts and a brand that is badly tarnished.

She faces an uncertain political future. There are still plenty of Democrats who argue for a "dream ticket". But Mr Obama probably has other ideas—particularly since she publicly speculated about his assassination. Mrs Clinton still has a power-base in the Senate. But she remains a junior figure in an institution with a famously low turnover, surrounded by colleagues who spurned her in favour of the new kid from Illinois; and Harry Reid is dug in as majority leader. She may find it more attractive to run for the governorship of New York.

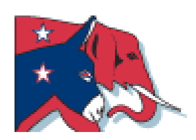
And, during the campaign, Mrs Clinton has damaged not only her future but also her past. The Clintons were modernisers who argued that the Democratic Party needed to reinvent itself—embracing free-trade, investing in human capital and reaching out to upwardly mobile voters. During her inept bid Mrs Clinton fell back on all the worst instincts of Democratic politics—denouncing free trade, stirring up the resentments of blue-collar America, and adding a flirtation with racism to the brew. After such an unedifying performance, it is hard to believe that Mrs Clinton's failed campaign represents a missed opportunity for America.

On the campaign trail

Primary colour

Jun 5th 2008
From The Economist print edition

Job seeker



“I have a lot of respect and admiration for Senator McCain. I'm also intrigued by Senator Obama.”

Scott McClellan, former White House press secretary who fell out with George Bush. USA Today*, May 30th*

Choose your sides

“Yep.”

Rupert Murdoch's response to being asked if he had anything to do with the New York Post*'s endorsement of Barack Obama in the primaries; the media mogul owns the* Post*. WSJ.com, May 29th*

The day job

“I have not been there for a number of votes. The same thing happened in the campaign of 2000. The people of Arizona understand that I'm running for president of the United States.”

John McCain has been absent for many votes in the Senate including this week's debate on a global-warming bill. Wall Street Journal, *May 29th*

Of her time

"She's my generation, you know? And she's had to fight right along with us. I mean, we couldn't wear pants. I couldn't get a credit card."

A 62-year old female Clinton supporter in Montana, explains her attraction. Wall Street Journal, *May 30th*

A time for mourning

“I want to say also, that this may be the last day I'm ever involved in a campaign of this kind. I thought I was out of politics, 'til Hillary decided to run. But it has been, one of the greatest honours of my life to go around and campaign for her for president.”

Bill Clinton seems to admit defeat, though his wife was still hanging on. NBC.com, June 2nd

Threat or promise?

“It's a critical time, but I have faith in the American people.”

Susan Sarandon, an actress, promises to move to Italy or Canada if Mr McCain is elected. New York Post, *May 29th*

Just say no

“What's wrong with being vice-president of the United States?”

Wolf Blitzer, an exasperated CNN news anchor, interviewing Mark Sanford, the Republican governor of

South Carolina, yet another reported vice-presidential candidate professing not to want the job. CNN, June 1st

A literary man

"I give up. You want to tell me?"

Mr McCain, at a town-hall meeting in Nashville, was asked to name the poet laureate. (It's Charles Simic.) Washingtonpost.com, June 3rd

Pollution law

Trading dirt

Jun 5th 2008
From The Economist print edition

A controversial bill on climate change goes before the Senate

Getty Images



But George Bush says no

A MAN who is worried about global warming is pounded into the ground by falling oil barrels; another who is worried about rising energy bills tries to fry eggs over some candles; commuters who cannot afford to drive jog to work in their suits. Political advertisements featuring such alarming images have begun to air in many states. They are not related directly to this year's elections but to a bill being debated in the Senate that would regulate America's emissions of greenhouse gases. If the proxy battle on television is anything to judge by, the debate is getting serious.

That said, the bill in question, named after Joe Lieberman and John Warner, the two senators who are sponsoring it, is unlikely to become law. It will struggle to secure the 60 votes needed to escape a deadly filibuster. Similar proposals are making much slower progress in the House of Representatives. And if the bill ever gets as far as George Bush's desk, the president has vowed to veto it.

Nonetheless, Lieberman-Warner has made more headway than any of its many precursors and rivals. Both Barack Obama and John McCain have endorsed its basic premise: that the government should stem emissions by issuing a steadily declining number of tradable permits to emit carbon each year. The Democrats, who look certain to control Congress after the election, also endorse this “cap-and-trade” approach. So Lieberman-Warner is likely to serve as a template for any future bill, and the negotiations over it provide a good indication of the horse-trading to come.

Three complaints, in particular, have come to the fore since the bill was unveiled last year. The first is that it will be too expensive. No fewer than ten different studies have attempted to assess the bill's economic consequences, with results ranging from the innocuous to the cataclysmic. But at the very least it is likely to raise the prices of electricity, natural gas and petrol, as energy firms pass on the expense of buying permits to their customers—a ticklish prospect at a time when voters are already enraged by rising energy prices.

Industrialists had hoped for a “safety valve”, whereby the government could sell unlimited extra permits if they got too pricey. But green lobbyists argued that the number of permits had to be fixed if the bill was to have predictable environmental benefits; they doubt the ability of politicians to keep their nerve.

The bill attempts to compromise by allowing the government to issue extra permits, but only by borrowing from the stock allocated for future years. To make their intention more explicit, the sponsors

have now set a price—$22 a ton—above which such borrowing of permits would be permitted. (Carbon rights currently trade at around $40 a ton in Europe.)

Messrs Lieberman and Warner have also agreed to set aside a bigger share of the government's revenues from auctioning permits to help the firms and consumers hardest hit by the new regime. In addition, they have expanded the scope for firms to pay for emissions-reduction schemes outside the country in lieu of making cuts at home. Previously, the only international offsets allowed were in forestry; now, any investment that reduces emissions would be eligible. In theory, this should lower American firms' costs.

But the bill still only allows a limited number of international offsets, and factories that compete with American firms would not be eligible. These restrictions are intended to address the second complaint about the bill: that it does too little to protect American manufacturers from rivals that can pollute as much as they want, in countries such as China and India.

In fact, the bill holds out more sticks than carrots to the developing world. The original had already threatened to impose tariffs on energy-intensive imports from the likes of China, but only if they had not changed their tune by 2020. To win over wavering colleagues, the sponsors have brought the deadline forward to a rather unrealistic 2014. They have also dramatically expanded the tariffs' scope: almost any manufactured good would now qualify. Moreover, to escape punishment, other countries will have to take “comparable action” to America's—an impossibly high hurdle for developing countries, if strictly interpreted.

Finally, many senators are put off by the bill's huge expansion of government. By 2050, according to one estimate, it will have earned almost $7 trillion auctioning permits. The sponsors propose spending roughly $1 trillion of that paying down the national debt. Some of the rest goes on energy research, but that still leaves plenty for pet causes, from endangered species to public transport. Bob Corker, a senator from Tennessee, wants to refund all the takings, by giving every American a rebate. The idea has spawned a bit of jargon of its own: cap-and-dividend.

California schools

The English patients

Jun 5th 2008 | SANTA ANA
From The Economist print edition

What happened after California abolished bilingual education

TEN years to the day after California banned teaching in any language other than English, Erlinda Paredes runs through a new sentence with her kindergarten class. “*El payaso se llama Botones*”, she intones—“the clown's name is Buttons”. When a pupil asks a question in English, she responds in Spanish. It is an improbable scene. But the abolition of bilingual education has not worked out in quite the way anybody expected.

Before 1998 some 400,000 Californian children were shunted into classes where they heard as little as 30 minutes of English each day. The hope was that they would learn mathematics and other subjects in their native tongue (usually Spanish) while they gently made the transition to English. The result was an educational barrio. So that year Ron Unz, a software engineer, sponsored a ballot measure that mandated teaching in English unless parents demanded otherwise. Proposition 227 passed easily, with considerable support from Hispanics. Voters in two other states, Massachusetts and Arizona, have since followed suit.

In Santa Ana, a mostly poor Latino city in Orange county, the number of children in bilingual classes promptly halved. Demand would have been even less had schools not prodded parents to request waivers for their children. In the past few years demand for bilingual education has fallen further. This year 22,000 pupils in Santa Ana are enrolled in “structured English immersion” programmes, where they hear little but that language. Just 646 are taught bilingually.

It has been a smooth transition, disappointing the many teachers and Latino politicians who forecast imminent doom for immigrant children. Yet the revolution in standards promised by Mr Unz's supporters has not come to pass either. State tests show that immigrants are indeed doing better in English. But so are native English speakers. In the second grade (ages seven and eight) the gap in reading ability between natives and the rest has narrowed only slightly; in higher years it has not narrowed at all. The results of national tests are even less encouraging.

Before 1998 many poor immigrant children in California received a dismal education informed by wrong-headed principles. They now just suffer from a dismal education. Fully 74% of English learners in the fourth grade read at “below basic” level, according to the National Assessment of Educational Progress. In 2006 a study found that, after six years, just one-quarter of Hispanic pupils could expect to be reclassified as fluent in English—which is, admittedly, a pretty high bar. This augurs badly for their economic future. And, since more than one immigrant child in five lives in California, it is also bad news for America's largest state.

Howard Bryan, who is responsible for English learners in Santa Ana, says that formal teaching methods matter surprisingly little. Pupils in well-run schools with demanding teachers, who are encouraged by their parents, tend to succeed whatever the language.

The problem is that many parents are unwilling or unable to push their children, and most programmes are weak. The abolition of bilingual education has revealed a much bigger problem. California's public education system is sclerotic, with a meddlesome central bureaucracy and mighty teachers' unions. Until it is reformed, immigrants will continue to struggle.

Few such problems afflict Ms Paredes's pupils. Hers is a “two-way” bilingual class in which exactly half of the children already speak English fluently. Most of them are the offspring of upper-middle-class Hispanics who worry that their children will grow up knowing no Spanish. The class is drip-fed English according to a strict formula. In kindergarten pupils speak English 10% of the time; by fifth grade they speak it 50% of the time. Not surprisingly, given the pupils' backgrounds, such classes score remarkably well in tests, Partly for this reason, two-way bilingual education is entirely uncontroversial.

Although such two-way programmes are much rarer than old-fashioned bilingual education, they have roughly doubled in number in the past ten years. They have even popped up in affluent white areas like Santa Monica. While the teaching of English to immigrants is not going too well, the teaching of Spanish to natives is going swimmingly. The clearest change wrought by Proposition 227 is that Spanish has turned from a remedial language into an aspirational one.



WORLD

UNITED STATES

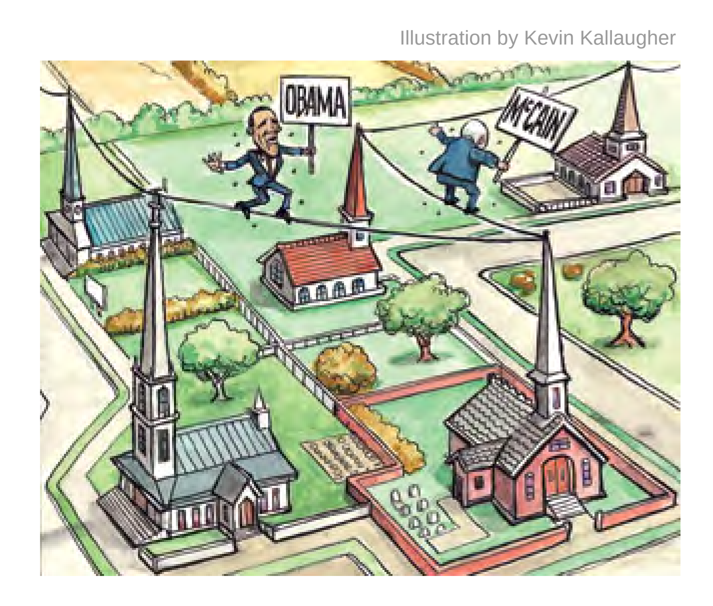
Lexington

Crises of faith

Jun 5th 2008
From The Economist print edition

Both Barack Obama and John McCain have problems with religion

Illustration by Kevin Kallaugher



FEW Democrats have seemed more comfortable talking about God than Barack Obama has. And yet few, if any, have had more problems with God at the ballot box—from rumours that he is a Muslim to doubts among Catholic and Jewish voters to repeated “pastor eruptions”.

This is a serious worry for the Democrats as they gird their loins for the general election. Four years ago the party finally grasped what should have been obvious for years: that running as a secular party in a highly religious country is a recipe for defeat. George Bush not only beat John Kerry by huge margins among “values voters”. He also profited from a visceral sense that there was something unAmerican about the Democrats' secularism. Seven out of ten Americans routinely tell pollsters that they want their president to have a strong personal faith.

The Democrats sensibly (if cynically) set about closing the God gap. The party ran candidates with impeccable religious credentials—Ted Strickland, a former Methodist minister, in Ohio; Tim Kaine, a former missionary, in Virginia; and Robert Casey, a pro-life Catholic, in Pennsylvania. The Democratic National Committee also hired a new species of political professionals—“religious outreach specialists”.

The leading Democratic candidates all talked about God with a gusto that had once been reserved for the Republicans. Hillary Clinton said that she was a “praying person” who had once contemplated becoming a Methodist minister. She also outraged some of her hard-core supporters by describing abortion as a “tragedy”. John Edwards said that his crusade against poverty was rooted in his Christian faith. The New Testament, after all, has a lot more to say about poverty than about gay marriage.

But none of them talked about God as well as Mr Obama. Mr Obama had a great conversion story to tell—he was the child of agnostic parents who had “felt God's spirit beckoning me” as a young man and had been baptised at the age of 26. And he talked about religion in a way that appealed to both his party's religious and its secular wings. The Republicans may have co-opted religion for reactionary political ends. But the religion that Mr Obama embraced—the religion of Abraham Lincoln and Martin Luther King—was a force for social reform. In his career-making speech at the Democratic convention in 2004 he noted that Americans worship the same “awesome God” in the red states and the blue states. Surely the Democrats had discovered the perfect solution to their God problem?

Two high-octane preachers in Mr Obama's hometown of Chicago put paid to that hope. Jeremiah Wright's

cries of “God damn America” almost shook the wheels off his campaign in March. Then last week America witnessed another “pastor eruption”—Father Michael Pfleger, a white Catholic, mocking Hillary Clinton as an “entitled” white crybaby. Hardly the stuff of religious reconciliation and responsible social reform.

Mr Obama's problems with God are not limited to Trinity United Church, which he formally abandoned this week. He may have done enough to quell worries among Jewish voters with a robust speech on June 4th. But the persistent rumours that he is a Muslim—contemptible though they are—will remain a problem during the general election. A poll for *Newsweek* in May found that 11% of Americans believe that Mr Obama is a Muslim, and a further 22% could not identify his religion.

Mr Obama may also have problems with Catholic voters—a group that has been one of the most important swing votes in America since Ronald Reagan and that is over-represented in almost all the swing states. Mrs Clinton won 72% of the votes of white Catholics in the Pennsylvania primary—a nine-point improvement on her performance among whites as a whole and a 13-point improvement on her performance with white Protestants. Only 59% of Catholic Democrats, compared with 70% of Protestants, said that they would vote Democratic in November if Mr Obama were the nominee. Mr Obama's failure with Catholics was not for want of trying: he was backed by Mr Casey and recruited an army of “faith community contacts”. Nor was it a one-off problem: exactly the same thing occurred in Ohio, where Catholics put Mr Bush over the top in 2004, and Massachusetts, where even the Kennedy name could not rescue Mr Obama.

And then there's McCain

The good news for Mr Obama in all of this is that he is up against a Republican candidate in John McCain who has plenty of God problems of his own. Mr McCain has a tin ear for religion. He is in many ways a throwback to the pre-Reagan Republican Party of Nixon and Ford—a party that regarded religion as something that you did in private. He is much happier talking about courage than compassion. At one point recently he sounded confused as to whether he was a Baptist or an Episcopalian.

Mr McCain has also been making a hash of dealing with his religion problem. He initially embraced the support of the religious right's own versions of Jeremiah Wright in the form of John Hagee (who believes that the anti-Christ will return to earth in the form of a “fierce” gay Jew) and Ron Parsley (one of the leaders of the anti-gay marriage movement), though he recently rejected both men. He seems blind to the fact that the leadership of the evangelical community is shifting to a new generation of much more appealing leaders such as Rick Warren.

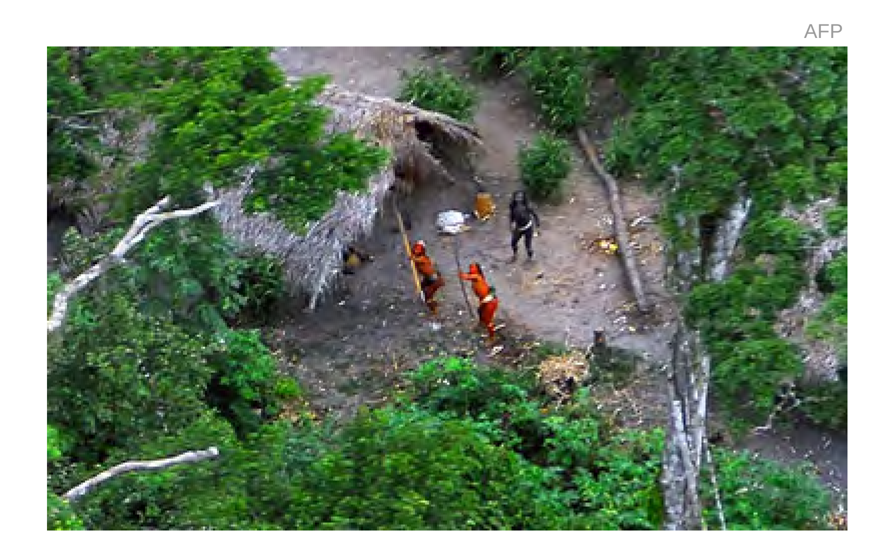
All this makes for a much more even fight for the religious vote than for a long time. But it will also make for a more intense fight—with the Democrats aggressively courting Catholics and evangelicals and the Republicans relentlessly trying to tie Mr Obama to Mr Wright. Those people, in both secular Europe and on the secular wing of the Democratic Party, who had hoped that America's God-soaked politics would disappear with Mr Bush are in for a disappointment.

Brazil and the Amazon

Welcome to our shrinking jungle

Jun 5th 2008 | BRASÍLIA
From The Economist print edition

AFP



A political storm over environmental policy has coincided with a rise in deforestation

FROM the Amazon last month, Brazil's Indian agency released aerial pictures of painted men with bows and arrows who have had little or no contact with modern civilisation. To judge from their hostile stance, they want to keep things that way. But the Amazon is the responsibility of Carlos Minc, Brazil's hyperactive new environment minister. In his first few days on the job he flew to Germany to talk about the Amazon, from there to the northern city of Belém to meet the governors of the states that contain the forest, and then on to Brasília where on June 3rd he explained to a crowd of journalists why the rate of deforestation is increasing again. “I haven't changed my shirt in three days,” he complained.

Since taking office in 2003, President Luiz Inácio Lula da Silva has balanced the wishes of those who would like the Amazon to be a giant park and Indian reserve against those who want to turn it into a giant farm. He appointed an icon of the conservationists, Marina Silva, as his first environment minister. He has sometimes been willing to enforce the law against loggers: in February he sent troops to Tailândia, a town in Pará state where illegal logging is the main industry, after inspectors from the environment ministry were thrown out by sawmill workers.

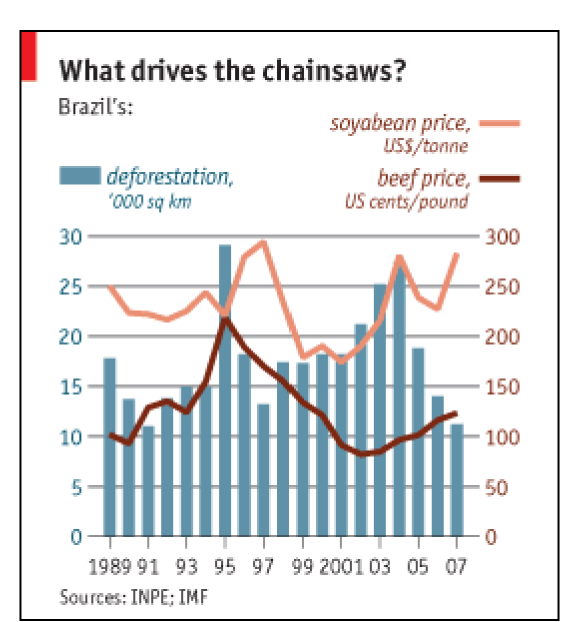
But Lula has also encouraged infrastructure projects in the Amazon that trouble conservationists, including two new hydroelectric dams. Instead of giving the job to Ms Silva, he asked Roberto Mangabeira Unger, a Harvard philosopher turned minister, to produce a development plan for the Amazon. And he is touchy when he feels Brazil is being lectured by foreigners: Europeans, Lula said recently, should take a look at a map of their own continent and see how much forest is left before telling Brazil what it should do with the Amazon.



All this was too much for Ms Silva. She grew up in the forest, learned to read only when a teenager, worked with Chico Mendes, an activist who was killed by ranchers in 1988, and later became a senator. She tired of lending her credibility to the government only to lose battles with other ministries. She resigned last month. Her replacement, Mr Minc, says that he accepted the job on a number of conditions (ten in all), which amount to a refusal to be pushed around. "I am not a masochist," he says, before admitting that it remains to be seen if the deal he thinks he got will hold.

It needs to if Brazil is to halt a recent rise in deforestation. On June 2nd the National Institute for Space Research, which monitors deforestation (see article), announced that the forest retreated substantially in April compared with the month before. The change may be explained in part by the fact that April was less cloudy than March, so a greater area was visible to satellites. But the trend is clear. The environment ministry began to get alarmed in January: in the previous two, usually wet, months nearly 2,000 square kms (770 square miles) of forest were cut down. There may be worse to come, as the next four months—the dry season—are normally peak ones for deforestation.

This increase has several causes, and picking out one or two tends to distort the picture. However it does seem that there is a link between high commodity prices and deforestation, with a lag of about a year (see chart). Brazil became the world's largest exporter of beef in 2004. Meat from the Amazon is eaten in Brazil but not exported because the cattle there have not been declared free of foot-and-mouth disease. So the link between a hamburger eaten in Paris and a tree felled in Brazil is indirect.



As for soya, the relationship is even more indirect. The vast majority of the crop is grown nowhere near the Amazon. But its expansion has pushed cattle ranches further into the jungle, and started itself to encroach on the forest. Big trading houses have imposed a ban on buying soya from recently deforested parts of the Amazon. It is too soon to judge the effects of this. Even so, Mr Minc has already picked a fight with Blairo Maggi, the governor of Mato Grosso and one of the world's largest soya farmers. Mr Maggi in turn has cast doubt on the reliability of the numbers on deforestation.

Yet high commodity prices are only part of the story. Illegal deforestation happens when ranchers and loggers conspire to clear swathes of land. A rancher typically claims a part of forest and then sells the timber rights to a logger. This helps to finance the next stage of the rancher's operation. The logger then takes what he wants and afterwards clears the area. The rancher tidies it up with the help of a bulldozer, burns what is left, sows grass and raises cattle. When the land is exhausted, as it quickly is, the ranchers move on.

That is the most common way to stake a claim to ownership of land in the Amazon. Of the 36% of the forest that is supposedly privately owned, only 4% is covered by a solid title deed, according to Imazon, an NGO. Since the government does not know who owns what, enforcing any rules is impossible.

As of July, says the new minister, ranchers and other farmers who fail to present any kind of documents backing up their claims to ownership of land will have lines of subsidised credit suspended. If they have not co-operated after four years, their land will be confiscated. But in practice it is close to impossible for the government to impose its will on the edges of its empire, even if it wanted to. Members of that newly photographed tribe are not the only people who do not recognise Brazil's sovereignty in the Amazon.

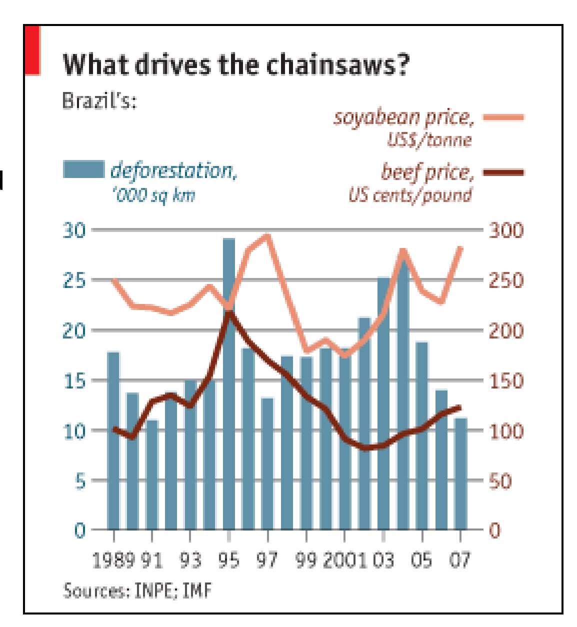
Measuring deforestation

Spot the rancher

Jun 5th 2008 | SÃO JOSÉ DOS CAMPOS
From The Economist print edition

What the numbers do and don't say about deforestation

Get article background



HOW reliable are the Brazilian government's estimates of deforestation? Not at all, according to Blairo Maggi, the governor of Mato Grosso state. He says his officials have visited areas officially identified as newly deforested to find that clearance happened long ago. Some scientists agree that the satellite images are not detailed enough to show what is really going on.

The National Institute for Space Research has two programmes that measure deforestation. The first, called PRODES, relies mainly on Landsat, an American satellite which provides colour images of great detail (each pixel represents 30 metres on the ground). But the forest is often obscured by cloud. So PRODES also draws on images from other satellites such as CBERS-2, a joint project between Brazil and China, to get an uninterrupted view of what is going on. The end result is a map made up of 213 separate images. Sorting through each image takes a good computer a whole day, so the institute also uses human interpreters. The results are released at the end of each year. In the past three years, PRODES has shown deforestation slowing (see chart).

The second programme is called DETER, an acronym that means “to detain” in Portuguese. It produces data every 15 days, using images from Terra, another American satellite. Terra's field of vision is over 2,000km wide, allowing it to cover the world in two days. This omniscience comes at a price: its resolution is only 250 metres, so it does not pick up smaller clearings.

DETER started in 2004 as a way to spot deforestation while it happens. Its results go straight to the branch of the environment ministry whose job is to prevent it. The institute uses these images to estimate total forest clearance, which is where the controversial monthly numbers come from. These monthly reports are more useful as a guide to the trend than as absolute numbers, according to Dalton Valeriano, who oversees both programmes at the institute's headquarters at São José dos Campos, near São Paulo.

DETER predicted the slowing rate of deforestation that PRODES duly reported in each of the past three years. With the monthly numbers now rising, the more accurate annual measure is likely to concur when it is revealed in December.



Venezuela

A police state?

Jun 5th 2008 | CARACAS
From The Economist print edition

A draconian charter for spies

Get article background

IT MAY be an autocracy, but Hugo Chávez's government has never been particularly repressive, let alone a dictatorship. A decree issued late last month with no prior debate threatens to change that. It creates a new intelligence and counter-intelligence system which in the name of national security enlists the entire population in what could potentially amount to a spy network. "This undoubtedly brings us close to...a 'police state'," declared Provea, a human-rights group.

The decree authorises police raids without warrant, the use of anonymous witnesses and secret evidence. Judges are obliged to collaborate with the intelligence services. Anyone caught investigating sensitive matters faces jail. The law contains no provision for any kind of oversight. It blurs the distinction between external threats and internal political dissent. It requires all citizens, foreigners and organisations to act in support of the intelligence system whenever required—or face jail terms of up to six years.

"The law establishes vague, generic crimes, which is very dangerous," in the view of Rocío San Miguel of Citizens' Oversight, an NGO. She says it abolishes the presumption of innocence and places the citizen at the service of the state rather than the other way round. She argues that the law also violates the UN Declaration of Human Rights and the Inter-American Human Rights Convention. According to one of the few remaining independently minded members of Venezuela's supreme court, Blanca Rosa Mármol de León, the "totally repressive law" also violates the constitution and the right to due process.

The government brushes off such criticism as politically inspired by an opposition bent on destabilisation. Ramón Rodríguez Chacín, the interior minister and a former intelligence officer, said there was often "no time" to obtain a court order before police raids. He also said that members of the new intelligence and counter-intelligence bodies will be required to demonstrate "ideological commitment" to Mr Chávez's "Bolivarian revolution".

The president's popularity is falling, according to most opinion polls. In December he lost a constitutional referendum. Regional elections in November are likely to erode his near-monopoly of power. The suspicion must be that this law is designed to defend a declining regime rather than to bolster the security of Venezuelans.

Nicaragua

Inglorious

Jun 5th 2008 | MANAGUA
From The Economist print edition

Daniel Ortega's lacklustre return

IN 1979 Daniel Ortega led a socialist revolution against a notorious military dictator, going on to rule Nicaragua as head of the Sandinista movement until 1990. Last year he became president again after winning an election against a divided opposition. But his return to power has been inglorious: in a recent poll only 21% of respondents approved of him. Now there are fears that he intends to stay in power indefinitely. “No to dictatorship” reads the slogan scrawled across hoardings in Managua, the capital.

Mr Ortega is treading a delicate path. He has secured cheap oil and other aid from Hugo Chávez in Venezuela without falling out with the United States or the IMF. But as the poorest country in Central America Nicaragua is hardly prospering. Inflation has reached 19% and investors have been scared off by the president's leftist rhetoric.

Only one of the eight other Sandinista leaders of the 1980s still supports Mr Ortega. His closest aide now is his wife, Rosario Murillo. She oversees many government functions, and runs the Councils of Citizen Power, new grassroots bodies that are touted as organs of “direct democracy”. These are supposed to help combat poverty but opponents say they undermine democratic institutions, including the police.

Mr Ortega's supporters hold only 40% of the seats in the National Assembly. He has relied on an unholy alliance with Arnoldo Alemán, a disgraced former president sentenced for corruption who leads one wing of the Liberal party. This cosy arrangement has now been threatened by the Liberals' recent decision to re-unite ahead of municipal elections due in November.

In April the Sandinista-controlled electoral authority suspended local elections on the Atlantic Coast, citing hurricane damage. Opponents say the government feared heavy defeat; the postponement prompted riots.

As Nicaragua increases its dependence on Venezuela's largesse, European donors are pulling out. The United States has built a big new embassy but offers less aid than Mr Chávez. In the 1980s America spent billions trying to overthrow the Sandinistas as part of its global tussle against communism. Now its interest has waned, with mixed results for the long-suffering people of Nicaragua.

Canada

Not just a breadbasket

Jun 5th 2008 | ALLAN, SASKATCHEWAN
From The Economist print edition

Saskatchewan becomes the new Alberta

THINK of Saskatchewan, and if you can place the western Canadian province on a map you might conjure up a vision of an endless prairie of wheat, so flat that the locals joke that “you can watch your dog running away from you for hours”. Now think again: Saskatchewan boasts the fastest economic growth rate of any Canadian province not just because of wheat but a rich mix of other farm crops as well as potash, uranium, oil and natural gas, all of which are enjoying record prices. PotashCorp, a fertiliser company based in Saskatoon, has become one of the biggest companies on the Toronto Stock Exchange by market capitalisation.

“We don't use the word boom, because it is immediately followed by that other word,” says Brad Wall, the provincial premier, whose centre-right Saskatchewan Party ousted a left-wing government last November. Such caution stems from history. The province was settled before the first world war by European farmers, lured to the area by free land and the mendacious promise of an “agreeable” climate (winters can feature temperatures of minus 50 degrees Celsius, and summers 40 degrees). In 1931 Saskatchewan was the third most populous province in Canada, behind only Ontario and Quebec. Depression and drought then ushered in eight decades of decline.

More recently, Saskatchewan has been overshadowed by neighbouring Alberta, where oil and gas have created Canada's richest province. Now, thanks to its export boom, Saskatchewan too has become a “have” province, which in Canadian parlance means that it no longer qualifies for federal handouts for certain social services. Canada's economy contracted in the first three months of this year (mainly because of the impact of the American slowdown on Ontario's industry). But Saskatchewan's job market is so tight that officials are visiting Ontario this month to try to persuade laid-off carworkers to move west. Migrants and returning residents have nudged Saskatchewan's population back over 1m—a far cry from predictions of 10m made a century ago, but seen as a milestone nonetheless.

Prosperity is not without its problems. The price of an average two-storey house in Saskatoon jumped 57% last year, while wage demands are astronomical too. The nurses' union rejected a 35% increase over four years. Aboriginal groups, who make up 14% of the population, complain they are not getting an equal share. Farmers grumble about the high fuel and fertiliser prices that are helping to make the province rich. As always, they worry about sudden changes in the price of their crops, or bad weather. “This year I could earn C$300,000 ($296,000) or I could lose C$300,000,” says Lyle Funk, who has a large farm in the centre of the province.

Mr Wall wants to use the commodity windfall to build more infrastructure and fund more research and development. The government plans a clean-coal power station in the south-east of the province, for example. All very well but prosperity has dulled the interest in diversification, says Doug Elliott, who publishes an economic newsletter. “We're still in the business of drilling holes in the ground and taking things out of it that are processed elsewhere,” he says.

Others are more optimistic. The bust, when it comes, may not be as deep or as long as previous farm slumps because biofuels now link grain and energy prices, says Richard Gray, an economist at the University of Saskatchewan. Canola (rapeseed), used in biodiesel, is an important local crop. Those runaway dogs might soon run into a few more people.



Asia's navies

Into the wide blue yonder

Jun 5th 2008 | SINGAPORE
From The Economist print edition

Asia's main powers are building up their navies. Is this the start of an arms race?



IN THE 15th century China possessed a mighty navy of “treasure fleets”. They sailed as far as Africa and the Persian Gulf, spreading China's economic and political influence across several continents. Had this naval expansion continued, some scholars say, China could have dominated the world. But successive emperors turned the nation inwards on itself, seafaring was banned and the country's great shipyards were closed. In Asia as elsewhere, it is America that rules the waves—its naval might is still needed, for example, to help defend the Malacca Strait, route for much of the region's oil and other trade.

Today a resurgent, confident and globalising China is rebuilding its naval strength. Like India, its rising Asian rival, it already has an impressive army. But both countries are finding that rapid economic growth is providing the money to realise long-cherished dreams of building ocean-going “blue-water” navies that can project power far from their home shores.

In the past two years China's navy has acquired new destroyers, frigates and submarines, some home-built, some (including its most advanced kit) Russian. A recent study by the London-based International Institute for Strategic Studies (IISS) concluded that China was also close to beginning the production of aircraft-carriers, which would give it the ability to project airpower over great distances. China has long wanted to create a force capable of thwarting the intervention of America's Pacific fleet in any war over Taiwan. But it is also increasingly keen to protect its supplies of fuel and raw materials from threats such as piracy and terrorism.

America has particular worries about a naval base China is building on Hainan island, from where its vessels will have easy access to South-East Asia's shipping lanes—most importantly the Malacca Strait. The Indians are afraid that China's reason for building ports in Myanmar, Pakistan and Sri Lanka, and

conducting naval exercises with Pakistan, is to extend its dominance into the Indian Ocean. Thousands of Chinese-flagged merchant ships now cross the ocean each year, giving China plenty of justification for increasing its naval presence. India, in turn, is pushing into the South China Sea, and seeking port facilities in Vietnam.

India shares China's concern that, as trade volumes and energy consumption soar, its security is vulnerable to any disruption of sea traffic. The flagships of its new blue-water navy will be three aircraft-carriers—the same number as Britain. The first of two Indian-built carriers is now under construction, with a launch date of 2010. A third, bought second-hand from Russia, is suffering delays and disputes over its refitting.

Tim Huxley of the IISS says that with so much attention focused on China and India, the naval expansion of other Asian countries is often overlooked. Yet several, especially South Korea, are also building long-range naval capabilities. Besides new submarines and destroyers, the South Koreans, like the Japanese, are commissioning helicopter-carriers.

Is this an arms race? As Asia's defence ministers and military chiefs gathered in Singapore last weekend for their main annual summit, the Shangri-La Dialogue (organised by the IISS), the conclusion of most analysts seemed to be: not yet. A classic arms race, says Mr Huxley, consists of two main countries that have one dominating dispute. Asia is different. Instead, it has the makings of a pair of opposing alliances. A “quad” group (India, America, Australia and Japan) plus Singapore now conduct naval manoeuvres together. So do China and Pakistan. But China and India seem keen to avoid provoking each other. Indeed, they are seeking to build good relations between their navies.

Military chiefs at the summit insisted they were not seeking an arms race and gave various justifications for all their new warships. Rather implausibly, China and others insisted they were mainly to ward off pirates and terrorists. South Korea's defence minister, Lee Sang-hee, said North Korea's navy threatened its maritime supply lines. As if to prove him right, on May 30th the North test-fired three ship-to-ship missiles in the Yellow Sea.

Disaster relief is also commonly cited as a reason to have a bigger navy. Within days of Myanmar's cyclone, three existing blue-water navies—those of America, France and Britain—had ships off the country's coast, laden with supplies (see article). South Korea's and Japan's new helicopter carriers could also one day be useful for moving troops in United Nations peacekeeping operations.

So there are plenty of ways for Asian powers to use their navies co-operatively. Equally, plenty of disputes might more easily escalate into war if the countries concerned had the naval strength to wage it. The potentially oil-rich Spratly and Paracel Islands, for example, are claimed in whole or part by six countries. In 1988 more than 70 Vietnamese sailors died in a naval battle with China in the Spratlys. Dozens of Koreans died in battles over a disputed sea border in 1999 and 2002.

Even without any ill intent, accidents will happen at sea. France's defence minister, Hervé Morin, worries about all the new submarines that will soon be lurking in the region's shallow and crowded shipping lanes. If one went missing, or suffered a collision, there is a danger of this being misconstrued as hostile action. He argues that to prevent minor incidents escalating in this way, Asian countries need to invest a lot more time in discussions of regional security and do more to replace mutual suspicion with co-operation and confidence-building. If not, Asia's cautious naval build-up could indeed mutate into a classic, old-fashioned arms race.

Myanmar

A month of misery

Jun 5th 2008 | BANGKOK AND SINGAPORE
From The Economist print edition

The junta is still thwarting efforts to help its desperate people

Get article background

WHEN the United Nations' secretary-general, Ban Ki-moon, met Myanmar's reclusive leader, General Than Shwe, on May 23rd, he secured a promise of free access for foreign aid workers to the millions of victims of cyclone Nargis. But more than a month after the cyclone, many have still not been reached. Access to the devastated Irrawaddy delta is only slightly freer.

Shortly before the UN chief arrived, the regime gave the UN's World Food Programme permission to bring in ten helicopters to ferry supplies down from the main city, Yangon, to the delta. But it was not until June 2nd that the first of these was allowed to fly there. The other nine were due to arrive in Yangon late this week but it was unclear what access they would be given to the delta. Médecins Sans Frontières, a French charity, says that its workers are still discovering villages in dire conditions that have received hardly any aid. The UN says only half of the 2m people affected by the cyclone have been reached.

Myanmar's neighbours in the Association of South-East Asian Nations (ASEAN) have made a big deal of leading a “coalition of mercy” to organise the international aid effort. But there has been little sign of it so far. This week ASEAN said the “emergency rapid assessment team” it sent to Myanmar would take three weeks to compile its initial report and that its full report might not be ready until mid-July.

America said on June 4th that its warships, laden with relief supplies, which have been waiting off Myanmar's coasts, would soon leave, because at least 15 attempts to persuade the regime to let them deliver the aid had been rebuffed. At a summit in Singapore (see article), America's defence secretary, Robert Gates, accused the regime of “criminal neglect” but rejected the idea, floated by France, of using force to send in aid without the junta's agreement.

Ignoring protests from aid workers, the regime has begun clearing relief camps and forcing refugees back to the wreckage of their villages, fearing that the tented camps might otherwise become permanent. The country's official press is peddling a fantasy in which relief is reaching all the victims and farmers in the delta—the country's main rice-growing region—are already planting their next crop. In reality, much land remains flooded with salt water and many animals used for ploughing were lost in the cyclone, along with stocks of seed and fertiliser. Many victims must now be losing hope as well.


WORLD
ASIA

Bangladesh

Looking for an exit

Jun 5th 2008 | DHAKA
From The Economist print edition

Like so many before it, the army finds that coming in is easier than going out

Reuters



Three's a crowd in jail: Zia, Nizami and Hasina

Get article background

THE two big political parties in Bangladesh are loth to accept what lawyers say is now only months away: the conviction on corruption charges of the jailed former prime ministers, Khaleda Zia of the Bangladesh Nationalist Party (BNP) and Sheikh Hasina of the Awami League. This would bar the two rivals, who have dominated Bangladeshi politics since 1991, from the election the army-backed government promises for December.

The parties, both personality cults centred on the jailed leaders, are acting tough. Late last month the Awami League said it would not join election talks with the government unless Sheikh Hasina was released unconditionally. The BNP followed suit—and also reunited, as a dissident faction miraculously rediscovered its love for Mrs Zia. Both parties threatened popular movements to free their leaders.

The army's response was swift. Since May 30th it has arrested nearly 12,000 local strongmen and politicians—a pre-emptive strike to break the organisational backbone of the parties ahead of local-government elections due in July. The latest arrests followed the detention of more leading politicians last month. They included Motiur Rahman Nizami, the head of the third-largest party, Jamaat-e-Islami. Some 100 members of the last parliament are now either in jail or on the run.

The local non-party elections are seen as a test for the parliamentary polls. The army, still the country's most popular institution, appears determined to bulldoze both through at any cost. But the unelected government's problems are multiplying: poverty has risen sharply in the past few years because of spiralling food prices, a Dhaka-based think-tank said this week. High oil prices, labour unrest, a severe energy crisis and the country's inability to forge closer economic ties with its huge neighbour, India, add to the woes.

The last time Bangladeshis had the chance to vote out a government was in 2001. But some soldiers despise what now appears a hasty rush to the exit. These dissenters, however, were sidelined in a shuffle this week. General Masud Uddin Chowdhury, the main adversary of the army chief, General Moeen U Ahmed, was in effect demoted for the second time since he led the coup that ousted the squabbling politicians in January 2007. The move consolidates General Moeen's power and, for now, removes the threat of a coup within the army. He has vowed to hold within the two years elections for which foreign governments have seemed ready to tolerate the suspension of democracy.

But the exit might be blocked. The parties remain unreformed. Their senior leaders say in private that it would be political suicide to come out openly against their still popular leaders. The army must hope that

once the two women have been convicted, their parties will defy them and take part in the elections. Unless they do so and the army lifts the state of emergency, foreign observers are unlikely to lend legitimacy to the elections.

A desperate hunt is on for someone to fill the void. One diplomat recalls a “bizarre” meeting with Mohammad Ershad, a 78-year-old former dictator, who toured embassies a month ago, saying he had the army's blessing to lead a disparate coalition including the anti-Khaleda BNP faction. There is even talk that Mohammad Yunus, a famed microfinancier, might throw his hat back in the ring, after an aborted attempt to launch a party last year. The most sensible solution may be a national-unity government following the election. But that would require both the two big parties to disobey their feudal leaders and to share power. It is hard to say which is the longer shot.



Pakistan

Going, maybe

Jun 5th 2008 | LAHORE
From The Economist print edition

Pervez Musharraf may be on his way out. But he is taking his time

MANY Pakistanis think that Pervez Musharraf's days as their president are numbered. They may be right. On June 4th a senior adviser to the Pakistan People's Party (PPP), which heads the two-month old coalition government, said Mr Musharraf was “reconciled” to stepping down, and that the PPP wanted a “dignified” exit. It is certainly a slow one.

At the end of last month Pakistan was abuzz with rumours that he would throw in the towel and hop on a plane to a safe haven abroad. This followed reports of a late-night meeting when the army chief, General Ashfaq Kiyani, had leaned on the president to quit. It was also reported that the Musharraf appointee leading the crack “111” army brigade, whose remit traditionally includes coup-making, had been replaced by a Kiyani loyalist.

All this was provoked by an unexpectedly strong statement by Asif Zardari, Benazir Bhutto's widower and successor as PPP leader, calling the president “a relic of the past”, who could be impeached if he did not quit. Nawaz Sharif, the leader of the Pakistan Muslim League (Nawaz), or PML(N), the other big anti-Musharraf party, followed up with a blistering attack on Mr Musharraf.

But then the tension abated. The presidency swatted away the speculation and said Mr Musharraf was staying put. One army spokesman called the meeting with General Kiyani and the change in the command of the 111 brigade “routine”. Another denied there were any differences between the president and army chief. George Bush weighed in with words of support for his beleaguered friend.

Mr Musharraf made himself hugely unpopular when he sacked the chief justice of the Supreme Court, Iftikhar Chaudhry, in March 2007. He was humiliated when the judiciary banded together to reinstate Mr Chaudhry. To make matters worse, he imposed a mini-martial law last November. And, when Mr Chaudhry threatened to block him from a second term as president, he sacked all the troublesome judges. Then he was accused of complicity in Benazir Bhutto's murder in December—she had pointed a finger at the presidency as a den of conspirators.

The anti-Musharraf mood was reflected in February's election, which swept the PPP to power and all but wiped out the Pakistan Muslim League (Q), or PML(Q), the Musharraf loyalists known as the “king's party”. Since then Mr Zardari and Mr Sharif have united to try to strip him of his powers and force him to quit.

To impeach the president, or take away his powers, the PPP and PML(N) would need to pass a constitutional amendment, requiring a two-thirds majority in parliament, which they cannot muster. An alternative way to oust him would be to restore the sacked judges by an executive order, assuming they would go on to rule his presidential election unconstitutional.

That was the implied threat that may have provoked the reported showdown with General Kiyani. Mr Zardari wants to restore the sacked judges—but only if he can weaken their power to rock his boat. For this he needs a constitutional amendment, not an executive order. But he also wants to strip Mr Musharraf of all his powers, turning him into a lame duck.

This is partly because two previous PPP governments were sacked by powerful presidents. But it is also because it is a precondition set by Mr Sharif, who wants revenge for his toppling by Mr Musharraf in a 1999 coup and his subsequent exile. Mr Sharif says he will not support any constitutional amendment that stops the judges from turfing Mr Musharraf out, let alone one allowing him to keep most of his powers. So Mr Zardari is hoping to press Mr Musharraf into quitting. He would then bring the king's party into the coalition and pass a constitutional amendment incorporating reforms that clip the wings of the judiciary.

With one rumoured crisis over, a more serious one may erupt on June 10th, when angry lawyers demanding a restoration of the judges and the sacking of Mr Musharraf start a “long march” from all over the country to converge on Parliament in Islamabad and the president's temporary army house in nearby Rawalpindi. The federal PPP government has said it will call out paramilitary troops that day to deal with possible law-and-order problems. The constitutional wrangle may be about to take to the streets, and turn ugly.

South Korea

Summer of discontent

Jun 5th 2008 | SEOUL
From The Economist print edition

President Lee Myung-bak's first 100 days have not gone according to plan

Reuters



Beefing about beef

THERE was little to celebrate as South Korea's president, Lee Myung-bak, marked his hundredth day in office this week. The president's approval rating is 21%, a fall of 31 points since his inauguration, according to Gallup, a pollster. Month-long protests against a decision to resume imports of American beef have grown in size and intensity. Many of the tens of thousands of people who gather nightly outside Seoul's City Hall call for Mr Lee's resignation.

The president's aides and his own right-wing Grand National Party confess they are worried about rising public discontent. *Dong A*, a conservative newspaper, marked Mr Lee's 100 days in office with a picture of summer storm-clouds louring over the Blue House, the office and residence of the president.

Mr Lee has only himself to blame for his abrupt fall from grace. Since his landslide victory in December, he has adopted an imperial style of leadership reminiscent of his days as chief executive of various arms of Hyundai, a conglomerate. Ignoring calls from many in South Korea for a more conciliatory style, he has pushed a controversial scheme to construct a system of canals. He has alienated civil servants by publicly berating them and threatening to cull their numbers in the interests of efficiency. And he has told state-run corporations they will be privatised, replacing many of their bosses with his loyalists.

In an effort to repair frayed ties with America, Mr Lee agreed in April to lift a ban on imports of American beef, which were suspended in 2003 after the discovery of mad-cow disease among cattle. South Koreans reacted furiously to the move. Housewives, pensioners, businessmen and students took to the streets in protest. Mr Lee was initially dismissive. His police chief warned protesters they needed a permit and would be arrested. That served only to fuel public anger.

This week a contrite Mr Lee said he would listen to the public's concerns. The Blue House has dropped hints of a cabinet shuffle. Among those expected to be replaced is the agriculture minister. Even Mr Lee's own party wants his decision-making to become more transparent. But none of South Korea's political parties seems to be trusted by a public concerned about rising prices and the uncertain economic outlook. The main opposition United Democratic Party has yet to recover electoral support after suffering devastating losses in April's parliamentary elections. Even a UDP spokesman puts the party's approval rating at less than 20%.

Meanwhile America is expressing frustration at what it sees as its ally's unfounded fear of its beef. This week South Korea's government said it wanted to renegotiate the beef-import agreement. A Gallup poll found that 81% of Koreans support for this. But Mr Lee has much else to do to reclaim confidence in his leadership, and dispel the clouds gathering over the Blue House.

Hong Kong citizenship

Thou shalt have no other

Jun 5th 2008 | HONG KONG
From The Economist print edition

It is no longer enough simply to praise China

Illustration by Claudio Munoz



BORN in what was then a colonial outpost, Gregory So Kam-leung has led a life typical of many in Hong Kong: higher education and early career in Canada; return to Hong Kong during the boom prior to the handover to China in 1997; professional success as a lawyer; and political success with a pro-Beijing party. He was a natural choice for one of eight deputy-ministerial jobs—a new tier of political nominees in the civil service—filled last month. Yet Mr So's appointment as under-secretary of commerce has created a political furore. It says much about resurgent Chinese nationalism following the catastrophic earthquake in Sichuan and in the run-up to the Olympic games.

The storm broke when Mr So acknowledged that he held a foreign passport. This was not surprising given his upbringing. The Basic Law, Hong Kong's constitution, is explicit: foreigners can “serve as public servants...at all levels” save in a few specified posts. But Chinese-language newspapers were outraged, demanding that all government officials disclose any second nationality.

The controversy has sent shudders through Hong Kong. Australia reckons 30,000 people hold both Australian and Hong Kong passports. Canada estimates that 220,000 Canadians live in Hong Kong. Britain controversially refused to make a blanket offer of citizenship when it quit Hong Kong, but it slipped papers to a favoured few. And about 3.5m people, mostly still living in Hong Kong, hold “British National Overseas” passports, which provide the holder with no right of abode in Britain.

Many Hong Kong citizens have taken a two-track approach since 1997: slavish adherence to China; and a second passport stashed away, lest the new sovereign power turn nasty. China does not recognise dual nationality, but has winked at what is common practice in Hong Kong. It turns out that five of the eight new appointees hold a second nationality. Mr So has begun the process of renouncing his Canadian citizenship. The other four have also announced that they are severing their foreign ties.

Critics say that dual citizenship implies diminished loyalty to the motherland. The territory's chief executive, Donald Tsang, was criticised for choosing people now suspected of being unpatriotic and rewarding them with fat pay packets. Supporters argue the government should draw upon the best talent in a global city that is still heavily populated with people who grew up under different sovereignty. Mr Tsang, knighted by the British, chose not to take foreign citizenship. As the frenzy mounts, others will wonder whether to give theirs up, or to bury the second passport deeper in the sock drawer.

Zimbabwe

Can he win the election, again?

Jun 5th 2008 | JOHANNESBURG
From The Economist print edition

Unbowed by government violence, Morgan Tsvangirai leads his bloodied opposition party back to the fray

AFP



AS ROBERT MUGABE, Zimbabwe's president, raised hackles at a United Nations food summit in Rome this week (see article), his henchmen at home have been getting down to the violent business of making sure that their man wins the run-off presidential election scheduled for June 27th. Neighbouring countries continue to call plaintively for a peaceful vote. But on the evidence so far the election will be neither peaceful nor fair.

Arthur Mutambara, the leader of a splinter of the opposition Movement for Democratic Change (MDC), was arrested on June 1st for writing an editorial criticising the president. Morgan Tsvangirai, the MDC's leader and the man who bested Mr Mugabe in the first round in March, was detained by the police for nine hours on June 4th while on the campaign trail. Many opposition rallies have been banned and scores of opposition activists arrested. A ruthless campaign of repression has, so the MDC claims, left 65 of its supporters dead since March (Mr Tsvangirai is pictured above at the funeral of one of them). Thousands have been severely injured and, according to some estimates, 25,000 people displaced.

In an ominous sign of how the election campaign might affect those who are suffering most under Mr Mugabe, Care International, an aid agency, has had to suspend its relief operations after being accused by the government of supporting the opposition, a charge it denies. Human Rights Watch, a monitoring group, reports that the authorities have blocked some other aid agencies from distributing food in several provinces until after the election.

The beating, kidnapping and killing of key MDC activists has gravely weakened the opposition party's local organisations. Areas that were former strongholds of ZANU-PF, the ruling party, which dared to switch to the opposition in March, have now been turned into no-go areas for the MDC. Mr Tsvangirai plans to visit the ZANU-PF heartland of Mashonaland but ensuring his safety there will not be easy, as his party has not been licensed to carry firearms or even radios. A prominent human-rights lawyer fled to South Africa this week following threats against his life.

In order to vote, those who have already fled the violence will have to go back to their wards. To do so, they will need help and some assurances of safety. The MDC has launched a fund to assist victims with medical treatment, repatriation and rebuilding their homes, many of which have been burnt to the ground.

The Zimbabwe Election Support Network (ZESN), a local electoral organisation that sent about 8,000 independent observers around the country to monitor the first round, is struggling to do its work. Its offices have been raided and its members harassed. ZESN monitors have been asked to reapply for accreditation for the second round, and it is unclear how many requests will be granted. Observers from neighbouring countries deemed to be friendly by the government were expected to arrive in Zimbabwe on June 8th, but monitors, observers and journalists from the United Nations, the European Union or Western countries will not be let in.

It remains possible that Mr Mugabe's determination to hang on to power at all costs will strengthen the resolve of voters to turf him out rather than crush their spirit. But even if Mr Tsvangirai once again defeats his opponent at the ballot box, Mr Mugabe is not expected to bow out gracefully. His wife is reported to have said that her husband will only allow someone from the ruling party to succeed him. Security chiefs have vowed not to serve under a president from the opposition.

Things might be different if a trusted outsider were available to mediate between Mr Mugabe and the opposition. But the MDC has lost patience with Thabo Mbeki, president of South Africa, who has been the region's appointed mediator to date. In a scathing, bitter letter dated May 13th but leaked this week, Mr Tsvangirai asked Mr Mbeki to relinquish this role.

The letter (which Mr Mbeki says he never got) accuses Mr Mbeki of being ineffectual and partial, of blocking discussions at the United Nations and of letting a shipment through South Africa of weapons for Mr Mugabe's regime (though the shipment was blocked after trade unionists refused to unload it). “Since the 29th March election, Zimbabwe has plunged into horrendous violence while you have been mediating,” writes Mr Tsvangirai. “With respect, if we continue like this, there will be no country left.” The opposition refuses to participate in more talks with Mr Mbeki and asks for the appointment of a broader team. But time is running short.

Nigeria

Do reform the justice system

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Despite some advances, the justice system leaves much to be desired

Reuters



More rough than justice

YUSUF MUSA recently stood before a court—for only the second time since his arrest last July for alleged cheating, forgery and breach of trust. The former car dealer had been accused by a colleague of running off with two vehicles valued at 5m naira ($43,200). He spent a month in police custody, followed by four months in prison, before his request for bail was heard. It took 15,000 naira and two more days to complete the paperwork that his lawyer says "could [have been] done in a few hours—even if there is no electricity." And that was after Mr Musa's family had paid the police 100,000 naira in the expectation that a bribe would help reduce the charges. Mr Musa's experience is more common than not in Nigeria's justice system, though justice has been touted as one of the few institutional successes in Nigeria since its democracy was relaunched nearly a decade ago.

In some respects, the system has indeed improved. Politicians once thought untouchable have been brought to trial for corruption. Election tribunals have offered some redress to those who voted in last year's chaotic and rigged elections; so far, ten out of 36 governors have been told to step down. Corporate-responsibility lawsuits filed against multinational firms have been pursued through the courts, and President Umaru Yar'Adua's vaunted emphasis on law and order has raised expectations. But it is in humdrum cases, such as Mr Yusuf's, where no improvement has been seen.

For most Nigerians, the shortcomings begin with the police. Those arrested are meant to hear the charges against them within 24 hours, but many languish for days in overcrowded cells, awaiting charges. Lacking the means to conduct proper investigations, the police often make do with signed confessions after brutal interrogations. Uju Agomoh, founder of Prisoners' Rehabilitation and Welfare Action, a pressure group, says that in nearly 20 years she has never seen a prisoner who has not suffered physical or psychological torture by the police.

Many of those arrested never have their cases investigated at all. "Often these arrests are not done with a view to taking the person through the criminal-justice process," says Innocent Chukwuma, whose Cleen Foundation (formerly the Centre for Law Enforcement Education) researches criminal justice. "They are done with a view to extort and harass." He estimates that just 5% of those arrested ever end up in court. Many are extracted from police custody only by bribes.

So those who cannot pay linger in prison. Nigeria's 144 prisons have an official capacity of 25,000 but now hold almost twice that number, according to one report. Ikoyi prison in Nigeria's commercial capital, Lagos, was built for just 800 inmates; now it has over 2,000, with 20-30 new ones arriving every day. Conditions are abysmal, disease rampant, medicine basic. Inmates can wait months or years for a trial that may never happen; some 25,000 people are now in this limbo and few have lawyers to defend them.

Campaigners say it is hard to blame individuals for such systemic failings. The police force doubled between 1999 and 2004 but got little extra money for training or facilities. The prison service, the lowliest of the law-enforcement agencies, is shabbily treated. Salaries are often so meagre and paid so late that charities working in prisons sometimes offer food and soap to warders as well as inmates. The Legal Aid Council does not receive its meagre budget on time.

None of this is a secret. A dozen committees have met and published recommendations to decongest prisons, curb arbitrary arrests and speed up trials. The Ministry of Justice talks often and earnestly of reform. But past recommendations have been neither paid for nor implemented. “Losing a person to prison is worse than losing a family member to death,” says Etannibi Alemika, a former chairman of one of those many ineffectual committees. “With death, there is a sense of dignity. But when a husband is sent to prison for ten years, it stigmatises the family. They have to erase the capacity to mention his name.”

Israel

Don't make the desert bloom

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Milk and honey is all very well. But what about the water?



THIS is the fourth consecutive year of drought in Israel. Last winter it rained only about 65% of the long-term average. The water level in the Sea of Galilee, the source of nearly 30% of Israel's fresh water, is close to the danger line and hardly rose during the winter even though the pipeline that takes water from it was closed for part of the year. This week the government reacted with an emergency plan.

It includes spending 120m shekels ($37m) extra on improving water conservation and 915m shekels on better water recycling for agriculture. And it calls for building more desalination plants, to increase their output from 138m cubic metres a year now (with another 100m due to come on line next year) to 750m by 2020. But the priorities, say not a few critics, are the wrong way round. “It's missing the most important element, which is to charge all sectors a market price for water,” says Hillel Shuval, head of environmental health at the Hadassah Academic College in Jerusalem.

Israel shares its water sources with the Palestinians (the main aquifer that feeds many of its wells lies under the West Bank), as well as Jordan and Syria. Fast-growing populations are putting a strain on those sources. So is global warming: although average rainfall has not been dropping in the region, rain showers have become shorter and more intense, so more water runs into the sea instead of recharging the aquifers. The Jordan River is a trickle of its former self, and the Dead Sea, which it replenishes, is falling by around one metre a year.

Water management has improved, but not by enough. “Making the desert bloom”, a cornerstone of the early Zionist ideal, turns out not to have been such a smart idea. Agriculture consumes some 60% of the country's total of 2 billion cubic metres of water a year, but contributes less than 2% of GDP, thanks partly to water-guzzling export crops such as bananas and citrus fruits, as well as dates (these are fine in their natural habitat of oases, but in Israel large plantations of date palms stretch across otherwise arid desert).

True, the once huge water subsidies to farmers have dropped, as has their water use. Yoav Kislev at the Hebrew University calculates that water productivity in agriculture has increased threefold since the 1950s. A year and a half ago those farmers who got their water from the state water company (the majority) reached a deal to pay market price. That, according to Mr Kislev, would be around three

shekels per cubic metre. But the deal has yet to be fully implemented, and it will still allow for hidden subsidies which, he estimates, will cut the average price to around half that.

Israel could also, he says, do better in recycling its domestic water for agriculture. A lot of the treated water flows into the sea, and what is reused is still dirty enough to contaminate ground water; this has forced the closure of some wells. More alarmingly, because rubbish dumping in Israel is better controlled than it used to be, contractors now dump more waste illegally in the poorly supervised West Bank, which adds to the contamination of the aquifer.

Domestic use in Israel could easily be cut too. The government's 120m shekel conservation package, Mr Shuval says, is “too little, too late”. He points to Australia, which after years of crippling drought began a subsidised national campaign to install water-saving devices in every home, reducing domestic water use by 20%.

Even the chief scientist of the environment ministry, Yeshayahu Bar-Or, said last month, before the emergency plan was announced, that desalination was not enough. He predicts a dire long-term future: rising seas contaminate the coastal aquifer with salt water, global warming reduces rainfall by 35% by 2100, rising heat leads to the pollution of the Sea of Galilee.

The fondness for desalination, argues Gidon Bromberg of Friends of the Earth Middle East, an environmentalist group, stems from a confluence of interests. Politicians like big, headline-grabbing projects; Israel's government wants to promote the Israeli water-treatment industry abroad; and the plants, under long-term build-operate-transfer schemes, provide their builders with a guaranteed income. But desalination burns up energy, adds to the global warming that exacerbates the water problem and reduces the incentive to save water, even though conservation is usually cheaper. Mr Bromberg accepts that some desalination is necessary. But he says it should be a technology of last resort, not first instance.

Small country, big ideas

Jun 5th 2008 | CAIRO
From The Economist print edition

Oil and clever diplomacy win friends and influence

IN 1952, the year that Sheikh Hamad bin Khalifa al Thani was born, Qatar had fewer than 40,000 people, most of them barefoot nomads and fishermen, and not a single school. The emirate he rules now hosts Education City, a complex of branch campuses from some of the world's most prestigious colleges. According to IMF figures, the country's 950,000 residents this year surpassed those of Luxembourg to become the world's richest. They enjoy an income per person of $80,870. Yet that plump figure belies the far greater private wealth of native Qatari citizens, who number fewer than 200,000 but who own nearly all the emirate's assets, as opposed to the army of foreign guest workers who serve them.

Most of that wealth came easily, from oil. But Sheikh Hamad has succeeded in achieving something that other petro-despots have not. Qatar's emir has stamped this Jamaica-sized patch of flat, scorched desert, which sticks out of Saudi Arabia into the Gulf like a sore thumb, firmly on the map of international diplomacy.

Last month he coaxed Lebanon's viciously bickering politicians into ending a crippling 18-month power struggle, flying them to his capital, Doha, to thrash out an agreement. Qatar has also mediated between insurgent clansmen and the government of Yemen, and acted as an increasingly well-trampled bridge between the Middle East's polarised camps: America and its pro-Western Arab allies on the one hand, and the “resistance” block that includes Iran, Syria and the Islamist parties Hamas in Palestine and Hizbullah in Lebanon on the other. The talk now is of Sheikh Hamad healing the rift between Hamas and Fatah, the secular party of the Palestinian president, Mahmoud Abbas, and fostering a rapprochement between Syria and its estranged Arab brothers.

Qatar's oil money has certainly helped to make peace. A free week spent in one of Doha's six-star hotels would dull the meanest fighting spirit, and there are wags in Lebanon, for instance, who contend that their politicians pocketed other, bigger sweeteners. But there has been plenty of fast Qatari footwork too.

Since Sheikh Hamad ousted his father in a bloodless coup in 1995, observers have questioned the apparently erratic course of Qatari foreign policy. But under the guidance of his distant cousin, Sheikh Hamad bin Jasim, the long-serving foreign minister, and more recently also prime minister, Qatar has cut the apron strings that traditionally tie smaller Gulf states to bigger, older regional powers such as Saudi Arabia and Egypt, and adopted a firmly independent line.

The emirate has assiduously wooed the United States, inviting its Central Command to set up its forward headquarters at al-Udeid, an airbase near Doha, in time for the invasion of Iraq in 2003. The base has one of the biggest stocks of American military supplies anywhere in the world. Qatar has also pleased America by regularly hosting Israeli officials, and by sending a generous $100m in aid to help those hit by Hurricane Katrina in 2005.

Yet the country has reached out to America's enemies, too. As host of the annual summit of Gulf Arab leaders this year, Sheikh Hamad broke with tradition to invite Iran's controversial president, Mahmoud Ahmadinejad, to attend. Following Hamas's election victory in 2006, the sheikh publicly scolded America for working to undermine the results of the democratic process in Palestine. He has sent aid to help Gazans under Israeli siege, and millions more to help reconstruct the mostly Shia parts of Lebanon that Israel bombed in its war in the summer of 2006 with Hizbullah, whose leader, Hassan Nasrallah, he is said to admire. Qatari property investment has also helped to bolster Syria's sagging economy.

Meanwhile, both Sheikh Hamads have generously sponsored the Qatar-based satellite channel, al-Jazeera, whose lively, critical coverage and reform-Islamist leanings continue to attract high audience ratings, while annoying both pro-Israeli Americans as well as religiously conservative Saudis.

But the apparent contradictions in Qatar's policy are now paying off. Other mediators failed in Lebanon, for instance, because they were not seen as neutral. And even if it is just Qatar's money that wins friends, there is plenty more of that coming. The emirate's output of liquid natural gas, its biggest export, is set to double in the next five years.

French higher education

Under threat of change

Jun 5th 2008 | TOULOUSE
From The Economist print edition

Reuters



Slowly but surely, universities in France—and across all of Europe—are reforming

BENEATH the medieval cloisters and bleak 1960s campuses of Europe's universities, the ground is trembling. For years, Europeans have talked of doing something about higher education, so as to prepare better for the “knowledge economy”. But lingering taboos—over tuition fees, private finance, or competition—have inhibited the timid and frustrated the bold. Now, however, there are the first stirrings of genuine change.

The shortcomings of Europe's universities are well-known. Only two European universities (Cambridge and Oxford) are in Shanghai Jiao Tong University's global top 20. Europeans spend an average of $10,191 per student, measured at purchasing-power parity, next to $22,476 in America. They devote only 1.3% of GDP to higher education, compared with 2.9% in America, and—unlike in America—almost all of it is public money. Only 24% of working-age Europeans have a degree, compared with 39% of Americans. And Europe bags an ever-declining share of Nobel prizes.

Yet some changes have begun. One, inelegantly known as “the Bologna process”, involves the harmonisation of European degrees into an Anglo-Saxon “bachelors, masters and doctorate” structure. Despite fierce resistance in some quarters, by 2007 nearly three-quarters of countries had over 60% of higher-education students enrolled on courses compatible with the new structure. As the scheme settles down, it should promote mobility in both the education and labour markets, and give a further boost to the popular Erasmus student-exchange programme.

Another Europe-wide project is the new European Research Council. Designed to boost investment in pioneering scientific research, it will inject some €335m ($520m) this year in starting grants to individual research projects, bypassing national governments. It is awarding these grants, on the basis of peer review, to some 430 of the 9,137 researchers who put in bids for them.

Individual countries have also been busy. Since 2005 Germany has allowed states to charge tuition fees of up to €1,000 a year. It is trying to foster elite universities by encouraging them to compete for money. The Netherlands has given universities sweeping autonomy. Oxford University has just launched a campaign to raise £1.25 billion ($2.45 billion), the biggest fund-raising drive of any European academic institution. Britain has introduced tuition fees for England and Wales, now running at up to £3,300 a year.

Now France is having a go. It has 1.4m students enrolled in 82 state-owned universities. There are no

tuition fees, nor is selection of students on entry allowed, apart from the required *baccalauréat*. Lecture halls are swamped; first-year medical students camp out early for scarce places. Campus libraries close at weekends. As many as 52% of undergraduates fail after their first year; and 90,000 students quit university each year without a degree. France's brightest students compete for places at the elite, fee-paying universities, known as the *grandes écoles*, instead. And the best researchers snap up well-financed jobs abroad.

Given this depressing picture, an event on June 2nd in a rain-soaked quadrangle in Toulouse was startling. Before a crowd of international economists and French business chiefs, Valérie Pécresse, the universities minister, inaugurated the Toulouse School of Economics (TSE), a graduate school of the University of Toulouse 1. Its English name and English-only teaching are not the only novelties. The school announced that it had raised fully €33m, from private sponsors such as AXA, Total and BNP Paribas. Ms Pécresse is to match every euro raised with the equivalent in public money. Visibly moved, Jean Tirole, the new school's director, called it the “realisation of a dream”.

The launch of the TSE reflects two changes. The first is that, since last year, French universities have been granted autonomy. This means that universities, or departments, can set up private foundations, as the TSE has done, with tax breaks for donors. This will allow them to recruit the researchers they want, at the salaries the foundations allow them to pay (though like the TSE, they still cannot charge tuition fees or select students at entry level). The TSE intends to offer 18 new economics professorships over the next three years, to help reverse the brain drain. At one time, universities and companies looked at each other with deep mutual suspicion. Now, Michel Pébereau, chairman of BNP Paribas, calls the TSE a “model of excellence” for Europe.

Second, the once-sacred principle of equal treatment has been blown away. Past reforms have been guided by the idea that everybody should have a fair share. By rewarding the TSE's efforts, Ms Pécresse has explicitly blessed competition. She has also set up a €5 billion campus-renovation fund, to be allocated only to the ten best bids, forcing rival research and teaching bodies to co-operate. Last week she announced the first six winners from among a total of 46 bids, including a joint one from Toulouse 1 and other institutions in the city. They will use the money to build a new student centre, a digital library and a sports complex. As if to rub in her point, Ms Pécresse turned down several bids, including some from Paris.

The TSE is in some ways an exception: a centre of research that has for years been battling with pesky bureaucratic rules on hiring and financing that the government has now lifted. But it is not the only example. Universities in Grenoble, which also won a slice of the campus-renovation money, have been working with local research bodies and companies in technology and innovation. Strasbourg, yet another of Ms Pécresse's winners, is next January merging its three universities—which, like many French campuses, were split after the student riots of May 1968—to create a single, decent-sized institution that can compete internationally.

All of this is still tentative. Companies may be happy to support economics or science, less so philosophy or sociology. With stretched public finances, it is hard to see how university finances can be stable in the long run without tuition fees; yet they are firmly ruled out. And there remains fierce student and teaching-union resistance to any changes, thwarting reform on many campuses and often taking their protests to the streets.

Putting more money in is only half the answer. French universities also need to be freed from meddling bureaucrats, and in return to be made more accountable. A study for Bruegel, a Brussels think-tank, concluded that “having budget autonomy doubles the effect of additional money on university research performance.” Ministers may not be keen to relinquish control; French ones tightened their grip after May 1968. It is fitting that, exactly 40 years on, even they are at last having to let go.

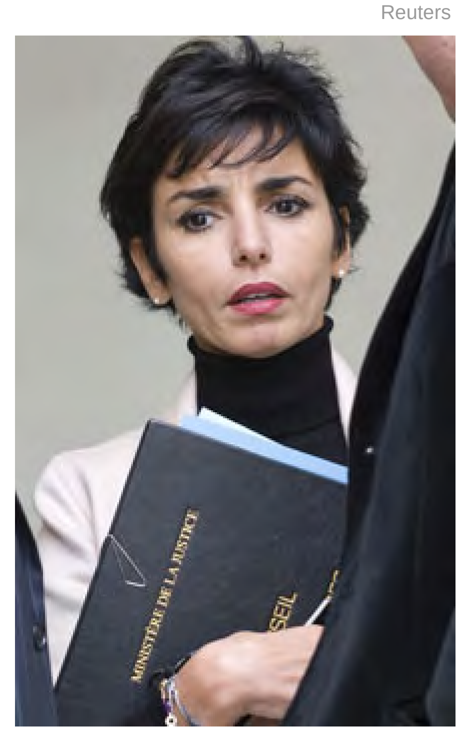
Muslims in France

Sex, lies and secularism

Jun 5th 2008 | PARIS
From The Economist print edition

How a lie about virginity embarrassed the justice minister

Reuters



Dati in a dilemma

RARELY has a judicial verdict in a civil court set off so much argument. But the annulment of the marriage of two French Muslims in Lille, granted because the bride falsely claimed to be a virgin, has prompted an outcry, culminating in a riotous parliamentary debate on June 3rd. The verdict touched a raw nerve in France, mixing complex questions of sexual equality, secularism and Islam.

On paper, the case has nothing to do with religion. The groom, an engineer, applied for an annulment because his bride, a student nurse, had lied to him about her virginity. Under the French civil code, an annulment can be granted “if there was a mistake about the person or the essential qualities of the person”. The judge declared the marriage void since it was “founded on a lie about her virginity”, which the bride acknowledged, and this constituted an “essential quality” in the eyes of both parties. The bride did not contest the annulment.

Yet the verdict was baffling. Lawyers were at a loss to explain why virginity, even if lied about, is an “essential quality”. The judge, said Ségolène Royal, the former Socialist presidential candidate, would never have agreed to the annulment had a case about false virginity been brought by a woman. The uproar was louder because the couple are Muslim. Fadela Amara, the (Muslim) junior minister for inner cities, who has previously campaigned to defend women from traditionalist pressures, called it “a *fatwa* against the emancipation of women”. Elisabeth Badinter, a feminist and left-wing philosopher, said she was “ashamed” of the French judicial system, and added that “women's sexuality is a private affair”. The verdict, she added, would force ever more Muslim girls to seek plastic surgery to reconstruct their hymens.

Most intriguing of all is the stance of Rachida Dati, the justice minister, born to north African Muslim parents. As a young woman, she had her own marriage annulled, after agreeing to it to please her family. Initially she backed the judgment, arguing that it would protect the woman, who seemed to want a quick separation. This week, however, she changed her mind, and sent the case back for review. Amid heckling in parliament, she accused the Socialists of abandoning young girls to the rule of “big brothers” when they were in power.

The case may not have been about religion. But it has exposed the sensitivities of the secular French republic, home to Europe's biggest Muslim population, about the right balance to strike between respect for Islamic tradition and a firm assertion of French law.

Baltic co-operation

All at sea

Jun 5th 2008 | RIGA
From The Economist print edition

The ideal international summit is a dinner party with a waiting list

Get article background

ON ANY list of international organisations deserving the chop, the Council of the Baltic Sea States should have a high ranking. Its membership is illogical: non-Baltic Norway and faraway Iceland are in (thanks to their Nordic status), nearby Belarus is not. And its purpose is fuzzy.

Set up in 1992 after the collapse of communism to bridge the east-west gap across the Baltic, the 11-country body, complete with a secretariat, a rotating presidency and working groups and committees, plods on. Leaden but lavishly produced publicity material discusses “Balticness” and highlights such gems as the “expert group dealing with social inclusion, healthy lifestyles and work ability” and the members' supposedly common tastes in jazz and photography.

To its critics, such activities demonstrate a waste of taxpayers' money and busy people's time. Oddly, the biggest advocates of chopping are the members themselves. The main agenda item at this week's summit in Latvia was how to trim the CBSS's activities. If the sceptics have their way, it will become little more than an annual dinner party.

That could be a promising niche. “The CBSS is now so boring that the Russians don't try to disrupt it,” admits a normally hawkish official. Russia was represented in Riga not by the abrasive Vladimir Putin but by the man who was once his smooth summit sherpa, Igor Shuvalov (he is now the prime minister's senior deputy). Even when he was berated by countries prone to Russia-bashing, he remained impeccably, politely dull, insisting that the planned Nord Stream gas pipeline to Germany on the Baltic seabed threatens nobody.

Perhaps the biggest sign that the CBSS has a future is that France—which has no historical or cultural connections to the Baltic—is pressing to become a full member, possibly because it suspects that Germany is growing too important in the region. Existing members find this Gallic interest both puzzling and flattering. “It suggests that they don't really know what goes on here,” comments one official.

Yet if the CBSS is boring, the region is certainly not. Western governments are keeping a keen eye on the three Baltic countries' economic wobbles. They are also nervous about the spending power and energy clout of a resurgent Russia. That puts the Baltic in the front line of what one foreign minister calls “a sharp strategic conflict”. Not the kind of cosy, phoney Balticness that the CBSS purports to promote.

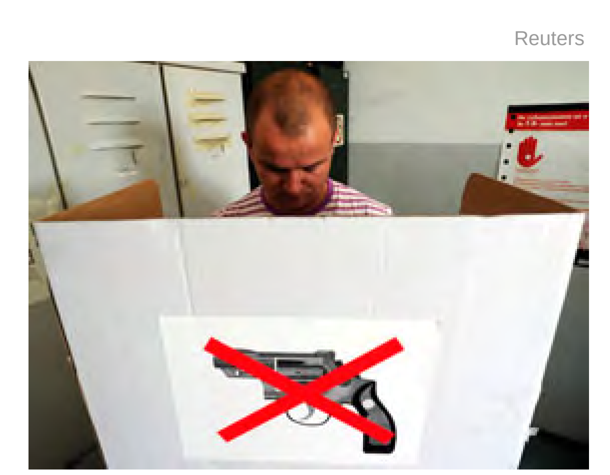
Macedonia's election

A Balkan Belgium?

Jun 5th 2008 | SKOPJE
From The Economist print edition

The ruling party wins, but the row over Macedonia's name drags on

Reuters



Ballots but no bullets

A FASHIONABLE idea is circulating among Balkan-watchers: “Belgianisation”. This is not meant to suggest complex federalism. Instead it implies that different nationalities whom history has left sharing a state are at last behaving like Belgians, reaching for ballot boxes and courts, rather than guns and bombs.

The Macedonian election on June 1st was condemned by observers for not meeting international standards. One person died in a shoot-out with police; several others were injured; and irregularities were reported at several polling stations. Yet it does not disprove the Belgian theory.

A quarter of Macedonia's 2m people are ethnic Albanians. In 2001 they skirted perilously close to civil war. Now, although no love is lost between the two sides, there is no violence between them. The election-day problems and reports of intimidation were entirely among Albanians. That is not good, but also not as bad as it could have been.

Macedonia's election was called after NATO's Bucharest summit in April, when Greece blocked its invitation to join alongside Albania and Croatia. Ever since Macedonian independence in 1991, Greece has tried to stop it being called by its name, insisting that it implies territorial claims to Greek Macedonia. That is why Macedonia labours under the name of Former Yugoslav Republic of Macedonia, or FYROM, in most international gatherings.

Recently the name issue, which had been dormant, was raised again. Skopje's airport was renamed Alexander the Great, a main reason why the angry Greeks blocked Macedonia's NATO bid. The Greeks now say they will prevent any movement towards European Union accession as well. Macedonia is an official EU candidate but it has not been given a date to start membership negotiations.

Drive into Macedonia from Kosovo and it is clear why the issue needs to be resolved. From the border to the Vardar river, which runs through Skopje, all the election posters have been for Macedonian Albanian political parties, and all flags Albanian. Cross the river and you might be in a different country. All posters are for Macedonian parties and all flags are Macedonian. Once the name is settled, Macedonia can join NATO and later the EU. Nobody could then question its statehood.

If the name continues to poison the region, says Veton Latifi, a political scientist in the main ethnic-Albanian town of Tetovo, politicians will set “new agendas” for the country. By this he really means old ones: a Greater Albania or a Greater Kosovo, and who knows what for the rest of the country. Yet the

election gave ground for hope. Nikola Gruevski, prime minister and leader of the centre-right ruling party, gambled on an early poll and won. The coalition led by his party gained an absolute majority in parliament. And though it needs an Albanian partner for comfort, he can “no longer be held hostage” as he was before by his Albanian allies or anyone else, says Ana Petruseva, assistant editor of Balkan Insight, a website.

Three questions arise. Which of the two Albanian parties will Mr Gruevski invite into government? Will he be strong enough to do a deal with Greece over the name and steer it through a referendum? And biggest of all: is Greece interested in a deal or is it happy for its companies to invest profitably in its northern neighbour while keeping it dependent on Greek goodwill for its NATO and EU aspirations? After all, only the EU (and euro) membership holds Belgium together nowadays.

The Sandzak region

To the baths

Jun 5th 2008 | NOVI PAZAR
From The Economist print edition

At least one possible Balkan flashpoint is no longer a huge concern



PEER through the steam of the Turkish bath in Novi Pazar and you can make out groups of sweaty men whispering about the latest news. It has been like this almost ever since the baths were built in 1594, when Novi Pazar was a bustling market town on the road from Constantinople to Sarajevo and Dubrovnik. Over the years the nature of local politicking seems to have changed little.

Today Novi Pazar is the main town of the Serbian Sandzak region, and most of its citizens are Muslim Bosniaks. The historic Sandzak straddles the border of Serbia and Montenegro. Much of it is strikingly beautiful and unspoilt. When Yugoslavia broke up, Sandzak, like Kosovo, seemed to many to be a potential flashpoint. Many Muslims rallied to a Bosniak nationalist party that dreamed of a Greater Bosnia. Yet except for the flags and symbols left from that era, such dreams have been long forgotten.

The population of the Serbian Sandzak is some 236,000, of whom just over half are Bosniaks. One of Serbia's poorest regions, it is hemmed in by Kosovo, Bosnia and Montenegro (see map). Serbian politicians court Sandzak's Bosniak leaders but Serbs do not really trust them. Yet there is little Muslim solidarity with Kosovo's Albanians, and even Bosnians tend to look askance at their Sandzak cousins, whom they see as aggressive peasants. In the past decade links with Bosniaks in the Montenegrin Sandzak have also weakened, as they are now comfortable in Montenegro. “We feel like orphans,” laments Selma, an English teacher.

In the 1990s relations between Sandzak's Serbs and Bosniaks were tense and lots of people emigrated. Paradoxically, many Sandzak Bosniaks did well during the wars. They made money from sanctions-busting, and Novi Pazar was home to factories churning out fake designer-label jeans. Much of that has gone. Many local businessmen, eager to break into European Union markets, are horrified by the prospect of Serbia retreating into isolation if its government is led by nationalists.

Politics in Sandzak is dominated by two parties that emerged from the wartime nationalist movement. Whichever is in power has the key to patronage in jobs and money. And any party that joins the new Serbian government will also gain influence over the police and judiciary in Sandzak. Serbia's Muslims are split, as well: one lot says their spiritual centre should be Sarajevo, the other that it should be Belgrade. On May 26th shots were fired at one of the two group's headquarters.

In Sandzak the influence over the media by local politicians is “alarming”, says Dragana Nikolic-Solomon of the Organisation for Security and Co-operation in Europe. An honourable exception is Radio 100 Plus, headed by Ishak Slezovic. “People have had it up to here with these idiots,” he says of local leaders bargaining with politicians in Belgrade who want the backing of Bosniak parties. Mr Slezovic says corruption is rampant and that politics and organised crime overlap. Does he investigate it? He laughs. Do that and “you would lose your head in five minutes.”

Data protection in Germany

Tap dancing

Jun 5th 2008 | BERLIN
From The Economist print edition

Political fallout from a telecom scandal

EVEN in a season of corporate misbehaviour Deutsche Telekom's wrongdoing stands out. Irked when confidential forecasts surfaced in a financial magazine in early 2005, somebody at Telekom hired a consultant to trawl through the telephone records of journalists, managers and members of its supervisory board. The practice continued into 2006 and came to light in *Der Spiegel* last month. The revelation that Telekom spied on its own customers, breaking several laws, has fuelled two of Germany's fiercest current controversies: over inequality and the trade-off between security and privacy.

It would be hard for Germans to be more cynical about their bosses. When they draw public notice, it is for their enormous salaries or for leading companies such as Siemens and Volkswagen into disgrace. Klaus Zumwinkel, chairman of Telekom's supervisory board when the snooping began, was ousted as head of Deutsche Post in February after being accused of tax evasion. Opinion polls suggest that 85% of Germans think managers are overpaid and only 9% have “substantial trust” in bosses of large companies. Meanwhile, the middle class has shrunk, welfare benefits have been cut and ordinary Germans are feeling insecure.

This general resentment has political consequences. The Social Democrats, junior partners in Germany's grand coalition, are preparing plans to cut the social-security contributions paid by the middle class, to be financed in part by raising taxes on the rich. There is also talk of fixing ceilings on executive pay.

Germany has taken seriously the duty to protect privacy ever since the end of the Gestapo. It has stringent laws, a watchful constitutional court and a network of data-protection agencies at both federal and state level. But these defences are under pressure. Wolfgang Schäuble, the steely interior minister, wants to fight crime, especially terrorism, by expanding the powers of the police and intelligence agencies. In January Germany implemented a European Union directive requiring telecoms companies to hold their customers' technical records for six months in case investigators needed them. Under a draft law, the federal criminal police could plant spyware on suspects' computers and video cameras in their apartments.

Germans have little reason to trust that such powers will not be abused. In April the foreign-intelligence agency was caught snooping on a journalist. Eavesdropping by private businesses seems epidemic. Lidl, a discount supermarket, was recently caught spying and compiling dossiers on its employees. Other discounters use hidden cameras. The newspaper *FT Deutschland* has reported that as early as 2000 Deutsche Telekom spied on one of its journalists with the help of former agents of the Stasi, East Germany's secret police.

Public resistance to the erosion of privacy is sporadic. The opposition Free Democrats and Greens have joined some Social Democrats in objecting to the new laws. On May 31st protesters demanding “freedom, not fear” demonstrated in some 30 German cities. Mr Schäuble is fending off pressure to tighten data-protection laws and to forgo greater powers for the police. The Telekom scandal is no reason “to make the state blind”, he insisted. Yet it may increase popular demand for better enforcement of existing laws. If so, Telekom will have done Germany a favour.

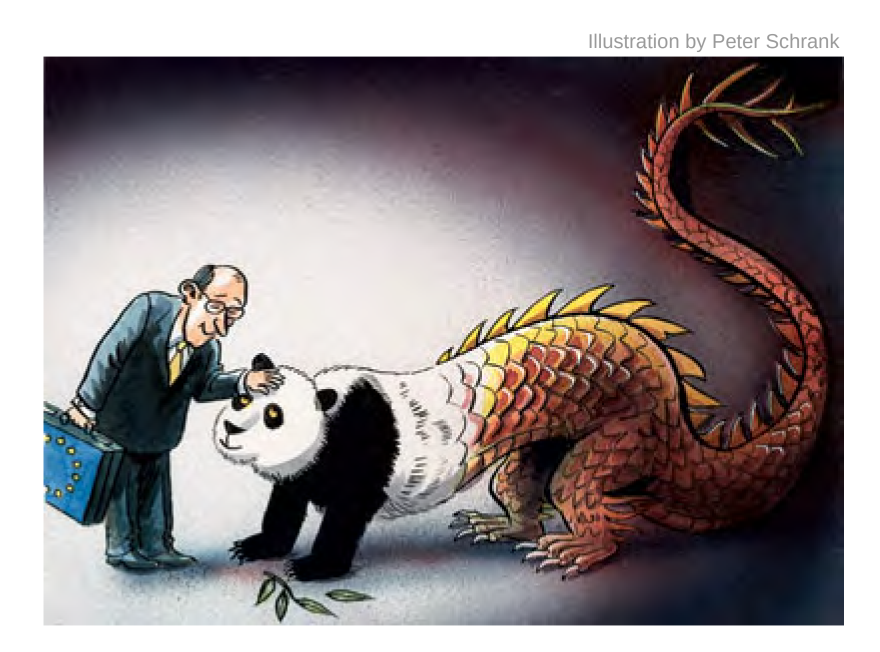



Charlemagne

Chinese torture

Jun 5th 2008
From The Economist print edition

Illustration by Peter Schrank



The European Union may find dealing with the Middle Kingdom trickier than it expects

IN THIS Olympic summer, expect to hear a lot about the century of China's rise and America's decline. That sounds like good news for the European Union, and all who dream of a "multipolar" order in which European wealth counts as much as American military might. China's rulers say they want economic development and a peaceful world in which no "hegemon" can throw its weight around. (Just do not ask too much about China's rising defence spending, or its contempt for freedoms that the EU holds dear.) Right on cue, two new publications have appeared, examining deepening ties between the EU and China—and what they may mean for America.

"Can Europe and China Shape a New World Order?" asks a pamphlet from the Centre for European Reform (CER), a London-based think-tank. It urges EU leaders to make the case to China for a world based on rules and multilateral co-operation. American policymakers are the target of "China-Europe Relations", a report from the Centre for Strategic and International Studies (CSIS) in Washington, which warns them to pay more (or even some) attention to burgeoning EU-China ties that could, if mishandled, cause a transatlantic "rift over China".

Europe and China do have things in common. Many Europeans are "rather relaxed" about America losing its status of unchallenged global superpower, says the CER report, with nice understatement. The EU is already China's largest trade partner, with two-way flows topping €300 billion ($440 billion) in 2007 (with the balance overwhelmingly in China's favour). As an exporter of manufactured goods, China should share Europe's interest in world economic governance and harmonised regulations—unlike, say, resource exporters such as Russia, which could sell gas and oil even in a lawless world.

China and Europe do not see each other as a military threat. America maintains troops and security alliances all around China's rim, and would be expected to defend Taiwan in the event of attack from the mainland. Most Europeans barely know that Taiwan exists, and when their governments do mention that embattled island, it is to chide it for "provoking" China with dangerous notions like democracy. Although in theory China, Europe and America are determined Iran should not go nuclear, China and some European governments often seem keener on trading with Iran than in curbing its weapons ambitions.

There is another common area. Whereas many Americans have in recent years seen the "war on terror" as an existential fight that overshadows all else, the Europeans and Chinese talk about terrorism as just

one item in their leaders' in-trays. Even a love of talking unites mandarins from Beijing and Eurocrats from Brussels. The EU now has 27 sectoral agreements and "dialogues" with China (with three more on the way), dealing with everything from human rights to co-operation in space.

So should America be worried? In a word, no. It is true that China talks about multilateralism a lot, and under outside pressure has been a bit more willing than it was to put pressure on pariah states such as North Korea, Myanmar and Sudan. But multilateralism means different things to Chinese and Europeans. At a recent two-day meeting of European, American and Chinese foreign-policy types, the Chinese made clear that sovereignty and stability trump all other concerns. Europe, in contrast, is founded on the very idea of pooled sovereignty.

European attitudes to China could change quite quickly. Take the Olympics. European protests against a Chinese-organised torch relay provoked deep anger in China (and the nationalist tone of that anger caused matching dismay in Europe). Once the games begin, America will probably be knocked off the top of the medal tables by China. That will be a shock to American pride. But if Chinese delight turns to nationalist swagger, that risks turning European stomachs (just as surely as victory chants of "U-S-A, U-S-A" did in previous games).

A far more substantial falling-out between Europe and China could be in store because of climate change. If terrorism has been seen by some Americans as an existential threat, climate change has arguably acquired the same status in Europe. And as tensions across the Atlantic have shown, people who feel their existence threatened find it hard to forgive others who disagree. The next American president is likely to be far more co-operative over tackling climate change than George Bush. But China's position is ambivalent: it is committed to tackling global warming, amid soaring carbon emissions, but it is also a developing country, with much growing to do (see article).

Whose carbon is it anyway?

European countries, led by manufacturing powers such as Germany, France or Italy, are already spoiling for a carbon-tinged trade fight with China. An EU deal to reduce carbon emissions is due to be agreed later this year, and it will impose big costs on European industry. At a summit in March there were demands for action against imports from countries that do not impose binding limits on carbon: some called for "green" import tariffs, others for making foreigners buy EU emissions permits.

Yet Chinese voices offer a counter-argument. If China is emitting ever more carbon, that is partly because it has become the workshop of the world. A hefty chunk of Chinese emissions (estimates of 30% or more are bandied about) is "embedded" in goods that are exported, often by multinational companies. In other words, many Chinese factories are really emitting European (or American) carbon. The likely response from EU leaders is not hard to guess: if that is European carbon, then those must have been European jobs.

Put globalisation, jobs and climate change into the same dispute, and you have the makings of a nasty trade fight. Before too long, Europeans may miss the days when American "hyperpower" was all they had to worry about.

Correction: European map

Jun 5th 2008
From The Economist print edition

The map in last week's special report on EU enlargement stupidly muddled up Slovakia and Slovenia. It also wrongly said Turkey and Croatia had submitted applications; both are actually in membership negotiations. Sorry. These errors have been corrected online.

Labour and the countryside

Green and unrepresented land

Jun 5th 2008
From The Economist print edition

Country-dwellers feel aggrieved and ignored. But they have reasons for optimism

Rex Features



EIGHTY per cent of England's people live in towns and cities. Yet it is the green and pleasant countryside that evokes the place to foreigners and residents alike. Tourist agencies, postcards and a national nostalgia industry promote lush fields, mossy rectories and village greens as a platonic ideal of England, far from the grimy streets and crowded houses of the big urban centres where most people actually live.

Despite their hold on the national psyche England's small band of genuine country-dwellers are feeling ignored. On June 2nd Philip Dunne, the Conservative MP for Ludlow (a pretty town in the Welsh Borders), accused Gordon Brown's government of diverting money from rural areas to urban ones, in a cynical attempt to please Labour-voting urbanites at the expense of their Tory-leaning compatriots in the shires. Mr Dunne's figures show that when Labour took office in 1997 country-dwellers received 57% of the official spending per head that Londoners did, yet today they get only 51%. Four days later Stuart Burgess, the head of the Commission for Rural Communities (CRC) and the government's chief countryside-watcher, reported that rural businesses—which make up 30% of the total in England—do far less well than those based in cities. Around 900,000 country households live in poverty, he said in April.

A six-percentage-point drop in rural funding is relatively modest, the news that country firms thrive less than urban ones will surprise few and urban folk are sadly inured to reports of rural poverty, picturing apple-cheeked lasses and simple pleasures. But such claims resonate because they play to a broader feeling that Labour—traditionally a party of the urban working class—has ignored the countryside.

The prosecution's case is a powerful one. Disaster and strife would dominate any account of the government's rural policy. The smoking bonfires of the foot-and-mouth outbreak in 2001 consumed 7m slaughtered animals and forced Tony Blair, then prime minister, to postpone a general election. The government's determination to ban fox-hunting provoked the second-biggest protest in living memory, with 400,000 people marching through central London in 2002 (a figure later eclipsed only by anti-war protests on the eve of the invasion of Iraq). Ineptness at the Rural Payments Agency, the bit of government charged with distributing agricultural subsidies, led to seriously delayed payment for hundreds of farmers and the resignation of its boss in 2006. Agriculture accounted for 1.3% of economic output when Labour came to power in 1997; in 2006 it contributed 0.9%.

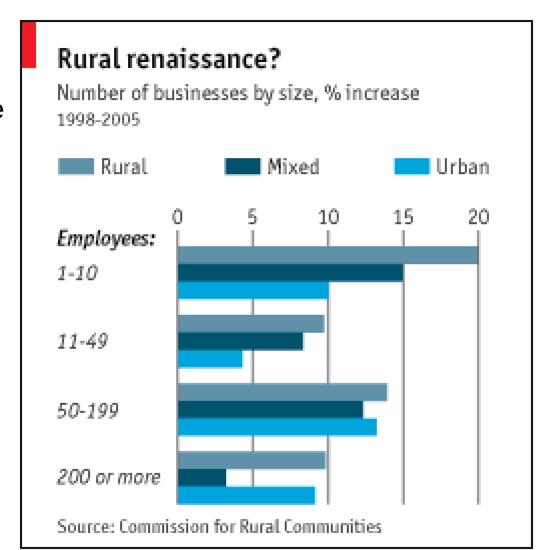
Less memorable, but equally unpopular, has been the steady drumbeat of post-office closures, disappearing village shops and, more recently, the threat of shutting schools in the name of

administrative efficiency. A decade of galloping house-price inflation has been keenly felt in the country, as rich refugees from the cities seek a slice of rural bliss and price out lower-paid young locals in the process (one reason why country-dwellers are, on average, five years older than city-dwellers).

Defenders of the government disagree with such interpretations. They point to the establishment of Regional Development Agencies, gatherings of the great and good charged with encouraging growth in the hinterlands. They say it was Labour that realised there was more to country life than farming and established the Department of the Environment, Food and Rural Affairs (DEFRA). This gave non-farming country folk a voice in cabinet.

But Neil Ward of Newcastle University thinks the charges of neglect are justified. The unexpected size of its election victory in 1997 forced Labour to come up with a rural policy, he argues, if only because it suddenly found itself with MPs from rural constituencies. But since the foot-and-mouth crisis, ministers have lost interest. “There are 17 people in DEFRA covering rural affairs, down from over 50 when the department was established,” he says.

How much harm that neglect has done is harder to gauge. Although the CRC report suggests that rural firms have smaller turnovers than urban ones, it also suggests that they are closing the gap. Rates of new-business formation have been higher in the countryside than in the cities since 1998 (see chart). Nor are these just small businesses spun off from farming: “the biggest industry on Dartmoor [a famously bleak upland in south-west England] is financial services,” notes a CRC spokesman. Incomes rose by 3.2% a year between 1995 and 2005 in rural areas, but by only 2.8% in the cities. And though farming accounts for less than 3% of employment in the countryside overall, it too is successful now. Thanks to rising food prices, farm incomes grew by 10% between 2006 and 2007, says Carmen Suarez of the National Farmers' Union, although input costs are now catching up. Land values have soared as well.



Of course, such average figures disguise as much as they reveal. Rural parts of the Midlands do well on business formation whereas East Anglia, for example, has been less successful. The countryside is anything but homogenous. But even if salaries are lower and business opportunities slimmer, many people prefer the idea of a rustic existence to an urban one. All but the youngest adults have been leaving the cities for suburbs and shires for decades, drawn by the better quality of life and, according to polls, a persistent desire to live in smaller, closer-knit communities.

Mr Ward thinks it is precisely Britain's yearning for the countryside that holds its hinterlands back. A more liberal planning system would allow towns and villages to accommodate new arrivals more easily, thus spurring development in rural areas. “We have this persistent idea of old-time rural changelessness in this country,” he says. “But it's a myth.”

Drinking

The prim and the lush

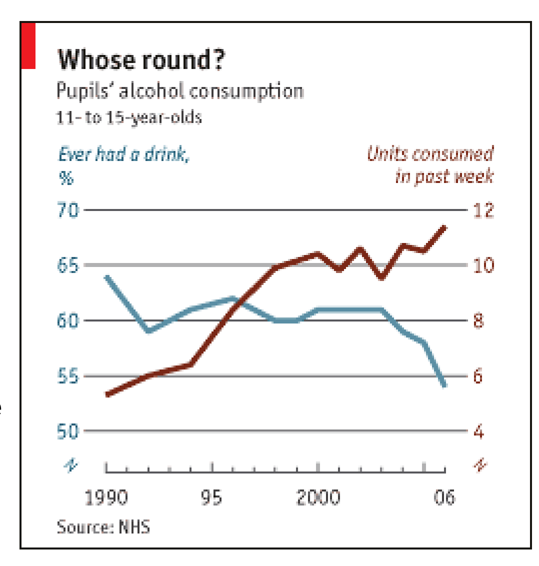
Jun 5th 2008
From The Economist print edition

Teenagers are polarising into teetotallers and old soaks

VOMIT caked the seats, beer slicked the platforms, glass crunched underfoot. London's Underground trains can be unpleasant on Saturday nights, but on May 31st they were especially hideous. Ironically, the thousand or so people who turned up to drink themselves silly were marking the introduction the next day of a ban on drinking alcohol on public transport. The episode was symbolic of the gleeful naughtiness which characterises Britain's approach to booze.

Britain has a drink problem. Quantity is not the issue: British adults each guzzle the equivalent of 10.4 litres of pure alcohol a year, ranking them only 15th highest in Europe (which, it should be said, is the world's most sozzled continent). But they can't hold it. Humiliatingly, they are prone to dying by falling over when drunk: worldwide, only Swedes and Hungarians are wobblier. And if the adults are embarrassing, their children are tragic: they are more likely to report getting drunk than those in any other rich country.

Now two trends are changing the landscape of underage drinking. Teenagers are necking more of the stuff, but fewer hit the bottle in the first place (see chart). Nearly half of young teenagers now claim never to have tasted alcohol. By contrast, those who do drink are doing it with gusto—especially 11- to 13-year-olds, who have trebled their consumption since 1992 and now drink almost as much as 15-year-olds.



The most conspicuous members of the young abstinence movement are the growing numbers of black and Asian children, who are respectively one-half and one-sixth as likely to drink as white children are. London, the most ethnically mixed of Britain's regions, is also the least bibulous. But demographic changes have not been big enough to explain the scale of the shift, or the corresponding increase in extreme drinking. What else has changed?

Pubs have become more hostile to underage drinkers. A decade ago, some make-up or a wispy moustache might have got a teenager served, but that is rare now. New guidelines will soon require bartenders to challenge anyone who looks under 21, though the drinking age remains 18. Penalties for bars that serve children have got harsher. Thwarted, some teenagers have given up the habit.

And some have not. Turned away from the pub, determined youngsters first went to drink on street corners, where there was little supervision. Driven away by no-drinking zones, another recent innovation, they have settled in parks, where they are even less closely monitored. Innocent pub drinks such as wine and shandy have been replaced by spirits, which are now almost twice as popular among the under-15s as they were in 1992. “In a pub aged 14, you had to behave yourself to avoid getting thrown out,” says Fiona Measham, a criminologist at Lancaster University. “Older drinkers played an informal supervising role. It may have worked better than we realised.”

The government now wants to prosecute youngsters who are persistently caught with alcohol, and to give the police greater powers to disperse youths from public places (to where, no one is sure). Will it make things better? In Scotland, where licensing laws are stricter than in England, 15-year-olds are less likely to drink than they are down south—but those who do, drink more heavily still. The temperance movement looks set to continue, but expect bingeing to keep step.

Bradford & Bingley

Clean bowlered

Jun 5th 2008
From The Economist print edition

A bungled rights offer sparks renewed fears about the banking sector

THE prospectus for Bradford & Bingley's original rights issue is not all that was pulped after the bank announced the terms of a revised offering on June 2nd. B&B's reputation is also in shreds. And a stockmarket unnerved by Northern Rock's near failure last year and house-price falls this year is disinclined to give the mortgage lender the benefit of the doubt.

B&B's credibility was already somewhat the worse for wear: in May it had revealed plans for a £300m ($586m) rights issue after firmly denying that it planned to do any such thing. But that was nothing compared with the decision in June to drop the issue price from 82p per share to 55p. Shareholders are now asked to stump up £258m; TPG, an American private-equity firm, will inject a further £179m in return for a 23% stake and two seats on the board. To add to the chaos, B&B also said that Steven Crawshaw, its chief executive, was resigning because of a heart condition and Rod Kent, the chairman, would take over until a replacement could be found.

A sharp downturn in the bank's performance prompted the about-face. In the first four months of the year, B&B made a loss of £8m, compared with profits of £107m in the same period of 2007. Some of that red ink can be traced to investments in toxic American mortgage-backed securities. But the real problem lies closer to home in Britain's deteriorating housing market. Mortgages more than three months in arrears leapt from 1.9% of B&B's book at the end of December to 2.5% at the end of April. Faced with a likely slide in its shares to below the original offer price when this information was released, B&B decided to rethink its capital-raising plans.

Critics have focused their fire on the apparent wrongs of the rights issue. The decision to pull the original offering lets UBS and Citigroup, the underwriters, off their obligation to buy unsold shares. TPG's arrival dilutes existing shareholders. But more worrying is what the fracas reveals about the bank's management.

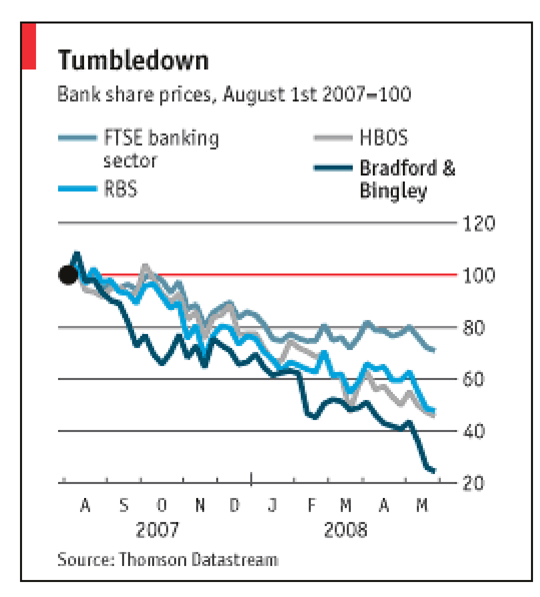
The data on April's performance reached the board only at the end of May, an age. Insiders blame B&B's sleepy building-society culture (it demutualised only in 2000); Mr Kent reckons that information transmission can be improved fast. But even without up-to-date figures, the state of the housing market was hardly a secret.

Arrears on the mortgages B&B acquired are greater than on those it originated, which suggests some credit-scoring skills in house. But the bank is locked until the end of 2009 into a contract to buy at least £350m of mortgages each quarter from GMAC, a loan supplier. B&B maintains that these represent a small proportion of its book, but the deal says little for the bank's risk management. The contract applies lending criteria from the frothy days of 2006, and one short-seller reckons B&B is paying more than it should for the loans.

Other banks are feeling the fallout from B&B (see chart). Fears that rights issues by Royal Bank of Scotland (RBS) and HBOS would be derailed have faded. But banks that seek to raise capital in future may have to discount offer prices even more steeply, or follow B&B down the path of private-equity investment. And the news does nothing for gloomy sentiment about the housing market, and banks' exposure to it.

Yet B&B may be a special case. Its bosses have been sloppy. The bank's dependence on wholesale markets is a particular longer-term concern. And it is heavily concentrated in buy-to-let mortgages. Although arrears on these loans are not out of

control, interest-only mortgages are a big component (which means that capital cushions are thinner when house prices fall) and they have yet to be tested in a downturn. The fact that TPG is willing to invest is a vote of confidence, but shares in B&B, trading at around 70p at mid-week, may yet breach the 55p level before the rights issue rolls around. And that really would be tough to explain.



Northern Ireland

Belfast: the film set

Jun 5th 2008 | BELFAST
From The Economist print edition

Another peacetime dividend

A GLIMPSE of Liam Neeson on a Belfast street would surprise few: the film star was after all born in Northern Ireland. But Bill Murray, Tim Robbins, Shirley MacLaine? Foreigners are discovering the charms of the newly peaceful Northern Ireland. A versatile relic of ancient industrial glory helps too.

The huge paint hall at the Harland & Wolff shipyard that built the *Titanic* does only odd jobs now, but it hooked Hollywood. Five minutes from the city centre, it can house several productions at a time in its four massive 85-foot-high cells. The insulation that kept wind, sun and rain from half-painted ships provides soundproofing too.

The hall comfortably held the throng of extras backing Bill Murray last autumn in a children's fantasy called “City of Ember”, due for release in October. The producers spent £9.3m ($18.2m) in 14 weeks in and around Belfast. Northern Ireland Screen, a government body which promotes the region to film-makers, thought that a good return on the £800,000 it provided. The film was shot entirely in the paint hall, which triumphed over bids from Prague and Berlin, among other places.

The actors were no less welcome than the money. Mr Murray wandered alone and cheerful through the streets, took to one downtown pub and bought the house a drink when the film wrapped. Tim Robbins, his co-star, is a Belfast aficionado, happy to come over before a shoot to give a lecture and sing his own songs, as he did a few years ago to cheer on a community theatre with another Oscar-winner, Julie Christie.

Belfast's main asset is the paint hall, which Northern Ireland Screen leases from the company that is developing the shipyard site. The agency also pitches rural Northern Ireland for its compactness, varied scenery and comparative quiet. Since 1997 a total of 36 feature films have been made in the region, in whole or in part. Belfast has figured as New York, London, Copenhagen, and indeed itself.

At a Stormont reception last December for the premiere of “Closing the Ring”, a love story set during the second world war, Miss MacLaine and Sir Richard Attenborough exchanged smiles with the Rev Ian Paisley and Martin McGuinness, then first minister and deputy first minister of Northern Ireland. Sir Richard extolled Northern Ireland as a place to make films. Neil Jordan, an Irish director who shot “Breakfast on Pluto” in locations including the empty Crumlin Road jail, found Belfast “very beautiful and interesting”. Dublin, by contrast, had become “clogged” with productions.

Several thrillers are scheduled this year. One stars Mr Neeson and James Nesbitt, a fellow Northern Irishman, as two men “wracked by their experiences during the Troubles”. It may go down badly with unionists riled by another Belfast production—“Hunger”, which depicts the last days of the IRA hunger-striker Bobby Sands and won the Caméra d'Or prize at Cannes this year. But many films now make Belfast a backdrop for stories other than its own—and are changing that story in the process.

Qualifications

Testing times

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From The Economist print edition

A new diploma may fail to improve vocational education while undermining academic quality

IN SOME countries schools send their youngsters off with a bang: a graduation ceremony, a diploma wrapped in ribbon and perhaps even a black-tie do. In Britain many barely wave goodbye. Sixteen-year-olds pick and mix GCSE subjects, and those who stay on to 18 take three or four A-levels (for the more academically promising) or choose from an array of vocational qualifications of variable worth. After 16 there is no common core of subjects that everyone studies. Tests are set and mostly marked by independent exam boards; schools give pupils no record of their passage through secondary education: no diploma, no transcript.

That all came close to changing in 2004, when Sir Mike Tomlinson, a former chief schools inspector, reviewed school-leaving qualifications for the government. He recommended replacing the current medley with a single diploma. All students would study English, maths and IT, as well as the subjects—academic or vocational—that interested them most. The intention was to boost vocational education's quality and status. But the idea was squashed by Tony Blair, then the prime minister. An election approached, and he feared that dropping A-levels would be regarded as abandoning education's “gold standard”.

This autumn, though, with his successor, Gordon Brown, in the driving seat, a qualification remarkably similar to Sir Mike's diploma will be launched. Vocational “specialised diplomas” for 14-19-year-olds developed over the past few years have been stretched and pummelled to try to accommodate pupils of all conceivable interests and abilities. Three academic subjects—science, languages and humanities—have been added to the 14 original vocational ones. The aim is a qualification that suits both those bound for university and budding craftsmen and technicians. Ed Balls, the schools secretary, says he hopes it will become young people's “qualification of choice”.

It could instead be “a disaster waiting to happen”, according to a report published on June 6th. There is indeed a crying need for vocational courses that satisfy employers, ensure students reach a decent standard in English and maths, and provide practically minded youngsters with the routes into work that have long been lacking in British education. But this protean diploma is unlikely to meet it, according to Alan Smithers and Pamela Robinson of Buckingham University, the report's authors. A diploma in “hair and beauty studies” or “hospitality” will inevitably restrict a student's future academic options. Yet the insistence on a single qualification suitable for all means less honing of practical skills than writing or talking about them—a “hair and beauty” student does not actually learn to cut hair.

The pair are not the only doubters. Jerry Jarvis, the managing director of Edexcel, one of the three big exam boards, has said that early adopters of the diploma risk emerging with a worthless qualification. So far only one private school, Wellington College, says it will teach the diploma, and then only in engineering, widely expected to be the most rigorous of the vocational subjects. State-school pupils and their parents also seem unconvinced. Last month Mr Balls admitted that at most 20,000 youngsters would start diplomas in the five subjects on offer this autumn. The original plan was for 50,000.

The missed opportunity to improve vocational education is pity enough. But academic education may suffer too. The addition of academic subjects and the delay of a planned review of A-levels until 2013, when all 17 diploma subjects will be in classrooms, suggest to many that A-levels and GCSEs are on the way out. They do not serve the majority well—only 46% of 16-year-olds gain five good GCSEs including English and maths. But they do allow academic youngsters to study three or four unrelated subjects to a high standard. The details are not yet settled, but if the academic subjects follow the pattern set by the vocational ones, such students would instead be forced to specialise.

And if, like vocational subjects and unlike A-levels, the academic diplomas are mostly marked by schools, they are unlikely to inherit their predecessors' status as hard exam currency. University applicants could find that they must take a plethora of exams like America's SATs or Advanced Placement tests, or ones

set by individual universities (only a few elite institutions require special tests now to spot the super-bright). And a successful British export might be killed off on the way: there is a market for A-levels among international schools and Commonwealth countries keen on their reputation for quality and the consistency conferred by external marking. It is not too late for a rethink.

Offshoring

So much for the scare stories

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New evidence shows that the gains outweigh the losses

Illustration by David Simonds



BRITONS have long been fairly sanguine about traditional forms of globalisation such as trade and international investment. But the outsourcing of work formerly done in Britain to foreign countries has aroused fears, not least because it opens up the protected underbelly of services to international competition. Until now hard evidence of its overall impact on the British economy has been elusive. New research* should dispel most of the anxiety for those who prefer crunchy facts to scary myths.

Economists at Nottingham University's Globalisation and Economic Policy Centre delved into the accounts of over 66,000 firms in order to trace the effects of offshoring. Big companies with overseas affiliates are the most assiduous offshorers. Accordingly, the study paid particular attention to 2,850 British multinationals with foreign subsidiaries.

The economists looked at the decade following the mid-1990s, a period in which offshoring increased by 35% in manufacturing and 48% in services. Even after this impressive growth, it still accounted for less than 5% of GDP in 2004. And despite the popular association of offshoring with Indian call-centres, only 4.5% of the service-sector multinationals and 8% of the manufacturers had subsidiaries in India or China. Most international outsourcing is carried out in other developed economies, especially those within the European Union.

One of the main worries about offshoring is its effect on employment. Some domestic jobs have certainly been discarded as a result: in 2005 offshoring accounted for 3.5% of job losses. But companies have also been able to produce more because offshoring has made them more competitive, and the resulting job gains have more than made up for the losses. The authors reckon the surge in offshoring since the mid-1990s has created 100,000 extra jobs.

Another worry about offshoring, and globalisation more generally, is that it bears down on wages in developed economies. The report finds no such impact in manufacturing but in the services sector offshoring has lowered average wages a bit. This seems to reflect the fact that service employers are dispatching more skilled and well-paid work to foreign locations.

It is precisely this worry that has caused the flap about offshoring. But wages have been shaved rather than shorn. If offshoring were to continue growing at the same rate over the next ten years, the average wage paid in the services sector would fall by 2% as a direct consequence. This effect would be small

compared with other factors affecting wages over the next decade, points out David Greenaway, one of the report's authors.

Offshoring does create losers, most obviously those whose jobs disappear when business operations are shunted abroad. But on balance it is good for the economy, making domestic firms more productive and generating jobs at home as well as abroad. Just as trade delivers overall gains to developed economies by allowing them to specialise in activities in which they have a comparative advantage, so does offshoring.

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*"The Economic Impact of Offshoring", by Holger Görg, David Greenaway and Richard Kneller

 WORLD
BRITAIN

Political rebellions

The best-laid plans

Jun 5th 2008
From The Economist print edition

An increasingly biddable government is under pressure again

JUST as the threat of one parliamentary rebellion against Gordon Brown appears to recede, another emerges. On June 2nd Labour MPs sceptical about the government's case for extending detention without charge for terrorist suspects to 42 days were treated to a reassuring speech by Jacqui Smith, the home secretary. She outlined concessions the government was prepared to make and the vote, scheduled for June 11th, is now less likely to end in defeat for the prime minister than it was.

Also unpopular, however, is the government's new planning bill, which comes before Parliament two days earlier. The controversial centrepiece of the legislation transfers responsibility for approving big projects, such as airports, motorways and power stations, from ministers and local councils to an independent Infrastructure Planning Commission (IPC). More than 60 Labour MPs have signed a motion opposing the IPC, though the number who would actually vote against it in the House of Commons is thought to be lower.

Critics of the change worry about democratic control giving way to what one MP calls a “cult of experts”. The battles fought over most infrastructure projects, they say, are inherently political—pitting local interests against national ones, and environmental concerns against economic imperatives. The expansion of Heathrow airport and the building of new nuclear power stations (which Mr Brown has said are necessary) are cases in point. Some suggest that Mr Brown has inferred too much from the apparent success of his first act as chancellor of the exchequer in 1997: transferring control over interest rates to the Bank of England.

Clive Betts, the Labour MP who proposed the amendment, says the IPC should be limited to making recommendations on planning applications; the final decision must rest with ministers. The Conservatives deplore the creation of another quango. And some MPs of all parties criticise the way the government has handled the bill's passage through Parliament. Hundreds of amendments made since it emerged from committee have rendered it barely recognisable, says one, and time for debating its key clauses has been limited.

Ministers, for their part, say the IPC will speed approval for much-needed infrastructure projects, in the process saving £300m a year in bureaucratic costs. And far from being undemocratic, the new arrangements would enhance the role of Parliament, insists the government. Ministers currently decide on big projects without consulting the legislature, and their decisions can be challenged only through the courts. By contrast, the IPC would be bound by a national policy statement drawn up by ministers and scrutinised by Parliament. Opponents pooh-pooh this alleged safeguard, saying that decision-making power is what matters.

The government can probably avert defeat on June 9th by doling out concessions. And in any case a loss would not be politically fatal, as even the Tories do not pretend that the planning bill is a vote of confidence in Mr Brown. But the government faces a larger danger: the perception that it is increasingly susceptible to pressure from within and without the Labour Party. Manifold sops were granted to placate MPs hostile to the 42-days proposal. In May, in an emergency mini-budget, £2.7 billion ($5.3 billion) was spent to reverse unpopular tax changes following months of lobbying from all sides. Alistair Darling, the chancellor, has indicated that he will respond to complaints from anxious backbench MPs and put-upon motorists about proposed changes to fuel duty. Multinational companies who have urged the Treasury to retreat from plans to tax earnings by foreign subsidiaries may also stand to get their way.

If the trend continues, the summer could prove perilous for Mr Brown. July will see a review of the Warwick agreement, a deal between Labour and the trade unions in 2004 in which the former made left-wing policy commitments (such as protection of temporary workers) in exchange for donations from the latter. Unions are demanding full implementation of the original agreement. Labour, which is in dire financial straits and keen to rally its traditional base, may not be in a position to drive a hard bargain.

The leftward drift that has long been feared by Labour centrists and long desired by much of the rest of the party could become a reality.

The world food summit

Only a few green shoots

Jun 5th 2008 | ROME
From The Economist print edition

Some good ideas, but too little cash, were among the fruits of a global gathering

EPA



BOSSES of the United Nations have some discretion over what to focus on. For Kofi Annan, the previous secretary-general, the big issue was peacekeeping and conflict in poor countries. For the new one, Ban Ki-moon, it seems to be the environment and natural resources. Last year he threw his weight behind a declaration in Bali on climate change. Earlier this year he sounded the alarm about water. Now he wants collective action on food.

This week 40-odd heads of government gathered in Rome under the auspices of Mr Ban and the UN's Food and Agriculture Organisation to talk about the miserable state of world farming and what to do about it. Many donors and governments are responding already. In theory, the summit could have done a lot more because, for the first time in a generation, soaring food prices have convinced everyone that something is profoundly wrong with world farming and needs to change. But how much new insight did this talkfest really add?

Joachim von Braun, the head of the International Food Policy Research Institute (IFPRI), a Washington-based research group financed by governments, says international action should focus on five things. The Rome summit made progress on a couple of them.

First, food aid. Earlier this year, the World Food Programme (WFP), the main agency for handing out emergency relief, pushed the panic button, saying it was running out of money because of dearer grain. At the summit, it announced an extra $1.2 billion of food aid, thanks partly to Saudi Arabia, which just before the meeting gave the programme $500m. The donation from a country awash with oil money had barely been noticed outside the WFP. But it was still a remarkable one. Most announcements of “new money” turn out to be old promises repackaged. This contribution was genuinely new and made a big difference.

Next, biofuels. The conference could have helped rationalise biofuels policy. Some non-governmental organisations want a moratorium on ethanol output, saying this would cut grain prices by 20%. Parts of the UN bureaucracy and some big food companies say they would support something milder, such as international restrictions on the production of corn-based ethanol. Still others argue that biofuels are fine as an idea but are beset by a tangle of subsidies, tariffs and production targets that needs unravelling. The summit made no headway in doing so. Just before it, America's secretary of agriculture, Ed Schafer, claimed that ethanol accounts for only 2-3% of the increase in world food prices—a contentious view (IFPRI says 30%) but one that left the summit irreparably and paralysingly split over biofuels.

Third, the conference could have come up with some short-term fixes, beyond food aid, to increase farmers' incentives and to cut world prices. The most obvious fix is to reduce export bans. Around 40 food-exporting countries have imposed some sorts of trade restriction of food: taxes, quotas or across-the-board bans. A study by IFPRI calculates that getting rid of these would reduce world cereals prices by an average of 30%. Summits sometimes dissuade leaders from beggaring their neighbours, since the neighbours' complaints may have to be faced in person.

But it is not clear the meeting in Rome achieved this aim. Vietnam, Cambodia and India have all promised to reopen some of their rice exports. Japan, a big importer, says it will release about a fifth of its government-controlled rice stockpile. But Egypt extended its ban on rice trade for another year, so it is hard to see a clear pattern of improvement.

This reflects one of the basic difficulties of getting coherent action in this area: countries' interests simply differ. Most developing countries are net importers, but some are net exporters. In Botswana and South Africa, food accounts for a fifth of the consumer price index; in Sri Lanka and Bangladesh it accounts for two-thirds. And while most poor nations are victims or beneficiaries of food inflation, China and India may be regarded as causes, too. Amartya Sen, a Nobel laureate and writer on the politics of famine, says rising demand (for example, from the Asian middle classes) and not failing productivity is the main reason for the current crisis.

It is not surprising that the summit did little about biofuels, export bans or social-safety nets (which it hardly discussed). In any case, as many speakers argued, the value of short-term measures is limited. “The underlying problem”, says Lennart Bage, head of the International Fund for Agricultural Development, “is the decline in agricultural productivity growth. Unless we reverse that, we'll be back in the same situation in a few years' time.”

International action for the long term goes beyond the scope of any one meeting. It would probably require a deal on world trade in agriculture, for instance—a distant prospect. But the Rome meeting did make a start on the longest of long-term goals: a second green revolution. Mr Ban said food output needs to rise by 50% by 2030. Countries are issuing, or at least preparing, a long list of promises to help finance research into new seeds, build irrigation canals and spread fertiliser use among small farmers (seeds, irrigation and fertilisers were the main components of the first green revolution in the 1960s). These promises could well be the main achievements of the Rome summit. A couple of weeks ago, the words “seeds and “fertilisers” were rarely uttered by rich-country governments. Suddenly, these old obsessions of development wonks have broken through into the domain of public policy.

Can it be done again?

Some argue that a second green revolution will be harder to achieve than the first, because genetically modified organisms provide the only hope for new seed, and Europeans are dead against them; because there is not enough water to permit a big expansion of irrigation in, say, Africa; and because oil at $125 a barrel makes fertilisers too expensive. That seems unduly pessimistic. As Mr Bage points out, the only thing known for sure is that there has been an enormous fall in agricultural investment over 30 years. It seems a bit early to rule out in advance the possible benefits of reversing that decline.

But saying smallholder agriculture needs investment, and actually providing it, are different matters. Over the past three months, pledges of money have surged and two institutions—the World Bank and IFAD, a UN agency—have emerged as the main prospective lenders.

Unfortunately, says Simon Maxwell of Britain's Overseas Development Institute, much of the “new” $1.2 billion promised by the World Bank, and the $500m from the Asian and Latin American Development Banks, is not really additional. It is diverted from other programmes, and this raises worries about robbing Peter to pay Paul. Moreover, even the so-called new funding doesn't amount to very much: tens of millions of dollars, which may be enough for some new seeds but is a far cry from the $15 billion-20 billion a year Mr Ban wants for a green revolution. Mr Ban's efforts to improve farming are laudable and ambitious. So were Mr Annan's efforts to boost peacekeeping.

Indigenous campaigners

Trooping the tribal colours

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A hardy and versatile species that can do surprisingly well in boardrooms, palaces and even diplomatic conferences

Reuters



Almir: the earth's his oyster

WHEN the five nations that assert sovereignty (and economic rights) in the melting Arctic conferred in Greenland last month, it sounded to the untrained ear like good news for the polar region and its people: they vowed to obey international rules (ie, not fight) and to counter the risk of oil spills in newly navigable waters.

But Aqqaluk Lynge, an artful poet-politician who is the best-known representative of Greenland's Inuit people, was unimpressed—and dismayed to get only ten minutes to address a meeting that might be critical for his island, which he longs to free from Danish dominion. “We will not be treated as pawns by outside powers who decimated our whale stocks in the 1600s, changed our religion in the 1700s, and then redrew our maps, imposed foreign borders and forcibly located many of us in the name of sovereignty,” he said afterwards. “This debate must include the Inuit, we will stand for nothing less.”

Mr Lynge's story is typical of the long journeys that many indigenous campaigners have made: journeys which have endowed them with a remarkable ability to thrive in very different cultural and physical environments. His parents were traditional Greenlanders who despatched him to Denmark as a boy to acquire European polish; like many a colonial sent to the metropolis, the experience made him a nationalist. He passionately defends his people's right to hunt seals, but he can willingly challenge any Parisian lefty to an intellectual debate on the finer points of anti-colonial theory.

In the heart of the Brazil's endangered forest, a similar sort of versatility is being honed by indigenous campaigners who are discovering some unfamiliar terrain.

Take Almir Surui, who at 33 is already an eminent figure in the remote expanse of Brazilian forest that he represents. He can tell you as much as anyone about its rituals, its flora and fauna, its tragic recent history—but there are gaps in his knowledge, and he seizes any chance to fill them. He was excited, in April, to meet a British ethnographer, John Hemmings, who described the time in 1969 (before Almir was born) when the tribe first met white people. So engrossing was the talk that they hardly noticed the liveried footmen moving discreetly in the background; they were guests of Prince Charles, heir to the British throne, who had invited 40 Brazilians to mull the future of the rainforest.

In common with many other indigenous activists, Almir (who uses his tribe's name as a surname when he needs one) is anything but shy or provincial. Life has made him resilient: his first memories are of the

diseases, caught from white people, which reduced his tribe's numbers from 5,000 to a few hundred—and of his father, armed with a bow and arrow, facing down a lorryload of loggers and police. When, at the age of 23, he visited Washington, DC, he was confused when he was served sushi—but he did manage to persuade the World Bank to audit a loan to his home region.

If anything offers hope for the survival both of the world's remaining rainforest and its inhabitants, it may be the rich world's feeling that forest-dwellers are the most effective stewards both of carbon and biodiversity. That gives activists like Almir a moral bargaining power which they are deftly exploiting, with a keen understanding of modern communications.

Climate change is both an obvious threat to the indigenous—destroying coral, causing droughts in rain-soaked forests, boosting pest populations, and melting the Arctic—and also, in a sense, an opportunity. People really want to hear the indigenous voice, even if some messages are at odds with conventional green wisdom.

Take the Inuit, who live not only in Greenland but also in Alaska, Russia and Canada. The far north has produced feisty Canadian activists like Sheila Watt-Cloutier, who has denounced airborne pollution and climate change—and the disappearance of ice on which hunters and their prey depend—as a vast human-rights violation. “We are being poisoned from afar,” says Ms Watt-Cloutier, a sophisticated sound-biter raised in a world where telling stories was the only entertainment. And some of today's stories are unexpected: Inuit campaigners deplored last month's American decision to list the polar bear as an endangered species.

Indigenous activists (and eco-activists) can be articulate exponents of the politics of grievance. But they can be also commendably firm about urging people to help themselves in any way they can.

In debates over the dire situation of Australia's indigenous people, one of the sanest voices is that of Noel Pearson, a lawyer who urges his people to break free of the culture of welfare and addiction. As an aboriginal, he can deliver messages of “tough love” that would not be well received if they came from white lips.

Nor do all indigenous activists insist that every single thing about their culture is positive. Paula Makabory, an Australian-based campaigner for the independence of West Papua from Indonesia, has voiced dismay over her people's tribal divisions.

At a recent conference in Darwin, Australia, it was stated that indigenous people see themselves as “mercury in the barometer” of climate change. True—but not all indigenous folk would concur with A.H. Zakri, director of the United Nations University and convenor of that gathering, in complaining that moves to combat climate change have been too “market-driven”. Some of the Amazon's indigenous tribes want to participate in carbon-trading projects, if the UN and others let them.

For many indigenous leaders, securing their future is not a question of market versus non-market, but of establishing who has the right to profit from their products and lore. Take Brazil's Yawanawa people: a tribe whose numbers and culture are bouncing back after securing the stewardship of an area of forest that was recently expanded to 194,000 hectares. Their leader, Tashka Yawanawa, was living in New Mexico and already an English-speaker when, at the age of 26, he received a summons to head his people. He made a deal with Aveda, an American cosmetics firm, to supply pigments for lipstick. And in a fine piece of indigenous publicity, Joaquin Phoenix, an actor, was invited recently to Yawanawa land, where he was painted in many hues and took part in a ritual that left his stomach rather scarred.

Almir Surui is just as bold in his choice of friends. He has made a deal with Google, the internet search firm, to use the mapping facilities of its Google Earth service to track illegal logging and mark the habitats of precious plants or birds. He is equally at home with princes and cyber-tycoons: he has a hunter's way of reading the signs and behaving accordingly.

Ex-royalty

Keep pretending

Jun 5th 2008
From The Economist print edition

A good retirement guide for monarchs

Reuters



Michael, the respectable Romanian

A KING with no throne might seem as pointless as an admiral with no ships. The Nepalese royal family probably feels pretty gloomy as it packs its possessions and prepares to leave its palace this week following the country's decision to abolish the monarchy. Claiming to be reincarnated Hindu gods may not be enough to stop the Nepalese ex-royals ending up in obscurity, like the pretenders to the Ottoman or Chinese imperial thrones. But history suggests that, with a bit of grit and imagination, being an ex-monarch can be a pleasant and even profitable occupation.

The big hope is that the republicans muck things up. Few monarchies have been successfully restored to their former glory (Spain's is a big exception) but plenty of pretenders find a respected place in their country's life. Afghanistan's Mohammed Zahir Shah returned from exile in Rome to Kabul as “Father of the Nation” in 2002—something that seemed unlikely during his nearly 30 years in exile. Bulgaria's ex-King Simeon confounded scoffers by returning after a 40-year Communist interregnum and serving (not very successfully) as prime minister; his counterpart from Romania, Michael, is a respected public figure (rather a rarity in that country's politics).

If things at home are still bad, moral leadership for the émigrés can be a decent job: the pretender to the Peacock Throne, Reza Pahlavi, is modestly important in the Iranian emigration; the royal families of Laos and Vietnam play a similar role in their countries' diaspora.

One big no-no is damaging the brand with playboy antics. The career of Vittorio Emanuele, head of Italy's royal house, has been dotted with scandals including a fatal shooting, fisticuffs, and allegations of anti-Semitism. In 2006 he was arrested on racketeering charges, which he denies. Another tip: selling titles to the gullible is a money-earner, but hard to manage discreetly.

One more risk: dynastic quarrels. (Can daughters inherit? Are marriages with non-royals valid?) Brazil's imperial house has two pretenders; Russia's monarchists can't decide between the Grand Duchess Maria Vladimirovna or Prince Nicholas. Portugal's monarchists are sorry that the head of their royal house, Duarte Pio, Duke of Braganza, made peace with the republic; oddly, he may be in line to take on the ultra-traditionalist Carlist claim to the throne in Spain.

So the lesson for Nepal's ex-King is clear: wait for the new Maoist rulers to disappoint; keep up the profile with good works, though not with active politics; and try some discreet commerce on the side. The Nepalese may take some convincing, but plenty of other people will love it.

Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Monitor

Watching while you surf

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Illustration by Otto Detmer



Online advertising: New ad-targeting systems, which determine users' interests by monitoring which websites they visit, are proving controversial

IS IT a worrying invasion of privacy for web surfers, or a lucrative new business model for online advertising? A new "behavioural" approach to targeting internet advertisements, being pioneered by companies such as Phorm, NebuAd and FrontPorch, is said to be both of these things. The idea is that special software, installed in the networks of internet-service providers (ISPs), intercepts webpage requests generated by their subscribers as they roam the net. The pages in question are delivered in the usual way, but are also scanned for particular keywords in order to build up a profile of each subscriber's interests. These profiles can then be used to target advertisements more accurately.

Suppose a web user is idly surfing a travel blog one Sunday afternoon. He visits pages containing words such as "holiday", "flight" and "hotel". The behavioural-targeting software watching him inside the ISP's network registers and categorises this apparent interest in travel. Later, when he logs on to a social-networking site to see what his friends are up to, advertisements for an airline or hotel chain pop up alongside the postings and photos. The depressing prospect of having to return to work the next day prompts him to click on an advertisement and book a minibreak for the next weekend.

To advertisers, this all sounds great. Behavioural-targeting firms are doing the rounds in Europe and America offering the prospect of working out what web surfers are thinking, perhaps even before they know themselves. If this really works, advertisers will be prepared to pay more to place ads, since they are more likely to be clicked on. That in turn means that websites will be able to charge more for their advertising slots. A small cut also goes to the ISP that originally gathered the profile information.

The companies involved suggest that internet users will welcome all this, since more accurate targeting will turn internet advertising from an annoying distraction into a genuinely helpful service. "This idea that we don't provide a service by doing this is as far from the truth as it's possible to be," says Kent Ertugrul, the boss of Phorm. "It creates a situation where there's less rubbish bombarding you."

But not everyone likes the idea. Opponents of behavioural targeting have kicked up the biggest fuss in

Britain, which is where the technology seems to be making the most progress: the three biggest ISPs (BT, Virgin Media and TalkTalk), which together account for around 70% of the market, have all signed up to use Phorm's technology. Since news of their plans emerged in February, over 13,000 people have signed an online petition opposing the system. Legal and networking experts have argued that it constitutes an unauthorised wiretap, and is therefore illegal. Richard Clayton, a computer-security expert at Cambridge University who has taken a close look at Phorm's systems, did not like what he saw. Proponents of behavioural targeting, he concluded, "assume that if only people understood all the technical details they'd be happy. I have, and I'm still not happy at all."

Phorm, which is now trying to get American ISPs to adopt its technology too, emphasises that consumers will be given the option to opt out of the system if they do not wish to use it. It points out that information about individuals' surfing habits remains within the custody of the ISP (which already has access to such information anyway), and that user profiles merely associate keywords with an anonymous serial number, rather than a name. Its profiling system ignores sensitive pages, such as those from online-banking sites, and will not be used to target advertising for pornographic sites.

Critics worry, however, that behavioural targeting fundamentally undermines the trusting relationship between ISPs and their subscribers, by allowing a third party to monitor what millions of people are doing. They also worry about Phorm's previous behaviour. Until last year it was known as 121Media, and it gathered information about internet users' interests by getting them to download "adware", which was included in bundles with other pieces of software. This software then monitored users' surfing habits and used the resulting data to target "pop up" advertisements of the kind that once blighted the web.

All this was legal, but it won 121Media few friends among PC users, who found its software difficult to remove from their machines. The revelation that the company, since renamed Phorm, conducted a secret trial of its new technology with BT in 2006 and 2007, monitoring thousands of customers without telling them, has not helped its image.

As the controversy swirls, Google, the 800-pound gorilla of the internet-advertising industry, is quietly watching. ISPs around the world have looked on jealously as Google has grown rich on their subscribers' web-browsing, while the ISPs have been reduced to "dumb pipes", ferrying internet traffic for subscribers but unable to win a share of their online spending.

Phorm and its ilk promise to change that, by offering ISPs a chance to get their hands on a slice of the fast-growing online-advertising pie. Behavioural-targeting firms also like to portray themselves as feisty underdogs taking on mighty Google, which is itself the cause of concern about online privacy. Phorm points out that its system does not retain detailed information about web usage as it builds its user profiles—in contrast to Google, which keeps records of users' search queries for up to two years. (The European Commission recently called upon Google to delete such information after six months.) "If people knew what was stored right now, they'd be shocked," says Phorm's Mr Ertugrul. His company's system, he says, is "the model for privacy online".

Even so, most web users are happy to strike an implicit deal with Google: it provides an excellent free search engine in return for the ability to display relevant advertisements. The quid pro quo with behavioural targeting, says Mr Ertugrul, is that ISPs will start making money from online advertising, which they can then spend on upgrading their networks, without raising prices for subscribers. "This is a way of funding the internet," he says.

Behavioural targeting is not necessarily a bad idea, but imposing it without telling people is likely to annoy them when they find out about it. Without adequate disclosure, an "opt out" system looks like snooping; but an "opt in" system, given all the fuss, now looks like a tough sell.

Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Monitor

Stop that car!

Jun 5th 2008
From The Economist print edition

Transport: New technological tricks and devices are being developed to enable police officers to track and halt suspect vehicles

Illustration by Belle Mellor



IT MAKES a spectacular sight. To stop a fleeing car, a pursuing policeman nudges the front of his own car against the rear corner of a fugitive vehicle. Then, by turning into the pursued car, the officer forces it into a jolting tailspin that brings it screeching to a halt. This manoeuvre, known as the pursuit-intervention technique, was developed in California in the 1970s. But it has dangerous repercussions, says Eddie Wren, a former traffic-control officer in Britain who is now the head of Advanced Drivers of America, a school for professional drivers in Williamsville, New York. Injuries are common and spun cars, unless rapidly boxed in by patrol vehicles, can zoom off again.

Furthermore, the manoeuvre may be becoming less effective as new traction-control systems become more widely deployed. At the same time, "run-flat" tyres are making another common method of stopping a vehicle—placing a strip of spikes across its path—less effective. Even cars with ordinary tyres are not always incapacitated by the spikes. Some career along on their wheel-rims at up to 160kph (100mph), says Geoffrey Alpert, an expert in vehicle-pursuit litigation at the University of South Carolina, in Columbia. The result is a lot of desperate high-speed chases, one in four of which result in someone getting injured, and causing 400 deaths a year in America alone.

One way to avoid the need for chases would be to track felonious vehicles electronically, instead of running after them. StarChase, a company based in Virginia Beach, Virginia, has developed a way to do just that. A pneumatic cannon is mounted on the pursuit car. With the help of a guiding laser, it shoots a satellite-based tracking device, smothered in epoxy goo, onto the target vehicle, allowing the police to track the suspect without endangering the public. The Los Angeles Police Department plans to deploy the system this year.

From the police's point of view, however, it would be better if they could actually stop a runaway car by satellite, not just track it. General Motors plans to allow them to do just that. From September its OnStar service, which provides navigation and emergency services to drivers, will include a system called Stolen Vehicle Slowdown. Police who believe a car to be stolen can ask an OnStar operator to disable its accelerator, while leaving the steering and brakes in working order. Some people worry that hackers might take over the system. But Chet Huber, OnStar's boss, reckons that the benefits outweigh the risks.

Military systems could also find a civilian role. Ron Madrid, an expert on non-lethal warfare, says that a new laser-warning system has proved particularly effective in reducing casualties at checkpoints in Afghanistan and Iraq. The device, known as an "optical distractor", floods the windscreen of a vehicle with a blinding green light. It is often coupled with special loudspeakers that are able to project verbal instructions to halt into noisy vehicles from over 100 metres away.

Non-toxic, slippery chemicals, designed to prevent the wheels of a vehicle from gaining traction, are also in development, as are spiked nets which can be laid flat on roads to entangle wheels. But one of the American army's main areas of research is into devices that can shoot enough electromagnetic energy into a vehicle to shut off its engine.

According to Andy Mazzara, the director of the Institute for Non-Lethal Defence Technologies at Pennsylvania State University, prototypes of such devices use a laser to create an ionised channel of air

through which an electromagnetic pulse is directed. That pulse is capable of burning out the electronics in a car, including its engine-management system, without harming the occupants. Its deployment is still a few years away. But when it comes, runaway drivers will get a zapping they will never forget.

Monitor

The rise of the low-cost laptop

Jun 5th 2008
From The Economist print edition

Computing: The ambitious "$100 laptop" programme is having a few problems, but it may have catalysed a whole new market

IN NOVEMBER 2005, at the World Summit on the Information Society conference in Tunisia, Nicholas Negroponte, a professor at the Massachusetts Institute of Technology, unveiled a small, cute, lime-green computer. The "$100 laptop" caused quite a stir among those interested in economic development. Dr Negroponte and his non-profit venture, One Laptop Per Child (OLPC), hoped that the combination of clever design and the scale efficiencies of manufacturing would make it possible to make the laptops for $100 each. Governments in the developing world, he predicted, would order millions of the laptops and give them to schoolchildren, triggering a revolution in education.

Sceptics argued that it would make more sense to spend the money on other things—water, sanitation, health care, teacher training—rather than laptops. Large orders from governments failed to materialise. Two-and-a-half years after it was unveiled, the machine, now officially known as the XO Laptop, still costs nearly $200 to make and only about 300,000 of the things have been distributed. And in recent months several senior figures have departed from OLPC, casting doubt over its ambitious goals.

AFP



A source of inspiration

But in one respect the XO Laptop has undoubtedly made an impact: by helping to spawn a new market for low-cost laptops. Hardly any models costing $500 or less were available when the XO burst onto the scene, but now there is a wide selection of such machines, from familiar makers such as HP and Intel, and from relative newcomers such as Asus and Pioneer Computers. By raising the very possibility of a $100 laptop, the XO presented the industry with a challenge. Wayan Vota, founder of OLPCNews.com, an independent website that follows the project, calls the XO a "harbinger of an entirely new class of computers".

The Classmate PC made by Intel, the world's biggest chipmaker, is arguably a direct rival to the XO. In July 2007 Intel joined the OLPC project, but pulled out in January 2008. Its departure stemmed from the rivalry between the Classmate and the XO, which take very different approaches to promoting low-cost computers in the developing world. The XO is a radical, clean-sheet design that runs the Linux operating system under a graphical interface called Sugar. The Classmate, by contrast, is a full-fledged but cheap laptop (it costs $300-500) that runs standard Windows software. Intel's promotional literature, touting the Classmate's "real PC capabilities" looked like a swipe at the XO.

But Intel had a point. The XO's Linux-based software is free and can be freely modified by users—something the XO's backers were keen to encourage. But government and education officials would prefer to stick with the software that has, for better or worse, become the worldwide computing standard. In May Dr Negroponte conceded that the lack of Windows support had hindered the XO's adoption, and announced plans to produce a new, Windows-based model.

Although the Classmate may have stolen some of the XO's thunder in the developing world, another low-cost laptop has been a runaway success in the developed world. The tiny Asus Eee PC, little bigger than a paperback book and weighing less than a kilogram, sold more than 300,000 units in 2007 alone. It is now available in several versions: the most basic model, with a seven-inch screen, costs $299, and a new high-end model with a nine-inch screen costs $549. HP, the world's biggest PC-maker, entered this new market in April with the "Mini-Note", a small laptop weighing just over a kilogram. It too will cost

under $500.

All of these new machines are being aimed at consumers in the rich world, who like the idea of a computer that can be taken anywhere, as well as being sold for educational use in poor countries. The $100 laptop has been a success—just not, so far, in the way its makers intended.


PRINT EDITION
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Monitor

An internet of sorts, on rails

Jun 5th 2008
From The Economist print edition

Transport: The Ruhr may eventually host an underground miniature railway, capable of carrying freight on automated trains

THE crowded Ruhr area of Germany, with 5.5m inhabitants, is famous for its autobahns—and notorious for the convoys of lorries that clog the lanes of those supposedly high-speed arteries. But frustrated motorists who wish to exercise their Teutonic right to speed-limitless driving have an ally. Dietrich Stein, of the Ruhr-University of Bochum, wants to free up the roads by diverting the Ruhr's freight underground. If his plan succeeds, the road network at the surface will be duplicated by a system of tubes below, inhabited by small vehicles that steer themselves automatically from factories to shops or even to individual homes.

Actually, this is rather an old-fashioned idea. There was a time, in many places, when letters and parcels could be put in capsules and sent through pipelines direct to people's houses. The capsules were propelled by air and whizzed along tubes from sender to receiver. Pneumatic delivery, as it was known, was commonplace from about 1850 to 1950. The largest system was in Paris, where more than 400km of tubes were laid. Berlin and London had extensive pneumatic systems, too. After 1950, however, the networks gradually closed down, and today only Prague still clings to this Victorian technology.

Dr Stein proposes to revive the idea, but not the actual technology. Instead of compressed air, he will use miniature railways to carry the capsules. His project, CargoCap, would mean building a double pipeline spine, 1.6 metres in diameter and 60-80km long, to connect the main cities of the Ruhr. Spurs from this spine would run to factories and shops. The capsules themselves would travel at 35kph (better than the average speed of traffic in the Ruhr) and each would be able to carry two standard-sized pallets of goods.

At the moment the project is, as it were, a pipe-dream. Dr Stein has taken over an old power station in Bochum and built a small track to test the railway's drive and control systems. He wants to create a network in which the capsules automatically link up to form trains, and then unlink when some of them need to dive down a spur. Apart from that trick, most of the technology needed to build CargoCap already exists. It is just a question of raising the money and persuading the authorities to let it happen.

To minimise opposition, Dr Stein plans to shadow roads, rather than tunnel under buildings, and to tunnel using automated equipment that requires shafts to be sunk from the surface only every 2km or so. That may be tidy enough to win over the authorities. As far as the money is concerned, though, he is on his own. Dr Stein recently managed to convince DHL, a large logistics firm, to chip in, and hopes, with its help, to build a pilot tunnel later this year. If it works, the Ruhr's Porsche drivers will have reason to cheer.

Monitor

Your number's up

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Illustration by Belle Mellor



Networking: The internet will run out of addresses unless a new numbering system is adopted. After years of inaction, there are now signs of progress

NOBODY would expect a city water system designed for 1m residents to be able to handle a 1,000-fold increase in population in just a few years. Yet that is what the internet's fundamental addressing scheme has had to accommodate. When the network was first established there were only a handful of computer centres in America. Instead of choosing a numbering system that could support a few thousand or million addresses, the internet's designers foresightedly opted for one that could handle 4 billion. But now even that is not enough.

The addressing system, called internet protocol version 4 (IPv4), cannot keep up with the flood of computers, mobile phones, hand-held gadgets, games consoles and even cars and refrigerators flooding onto the network. Nearly 85% of available addresses are already in use; if this trend continues they will run out by 2011, the Organisation for Economic Co-operation and Development, a think-tank for rich countries, warned in May.

The shortage is not the only problem; so too is growing complexity. IPv4 addresses are allocated in blocks to network operators. The path to reach each network is published on a global list that is constantly updated. Big computers, called routers, use these entries to guide the flow of traffic across the internet. But as more devices and networks link to the internet, it becomes necessary to subdivide the address blocks into ever-smaller units. This risks overtaxing the millions of routers that handle the internet's traffic, which must be regularly upgraded to keep up. Were there no alternative to IPv4, parts of the internet would eventually suffer from sporadic outages, warns Paul Vixie, a network engineer who wrote the software the internet uses to translate domain names (such as economist.com) into their underlying IPv4 addresses.

Fortunately a new system does exist, called internet protocol version 6, or IPv6. (Version 5 was a short-lived experimental system.) IPv6 provides 3.4×10^{38} (4 billion to the fourth power) addresses. This means IPv6 addresses can be allocated to network operators and companies in much larger quantities. It also provides a clean slate for establishing new paths over the internet, reducing complexity. But switching means upgrading millions of devices.

In fact, support for IPv6 is already widely available in software and hardware, but it has not been used much. Only a few research institutions and the American government took the IPv6 plunge early on. (In America all federal agencies must be capable of using IPv6 by June 30th 2008, by executive order.)

But in recent months the pace of change has picked up. In February Mr Vixie and others who operate the “root nameservers”—the central computers that translate domain names into internet addresses—flipped a switch that means domain names can now map onto IPv6 addresses. This may herald more widespread adoption of the new protocol, since it means that any organisation can use IPv6 addresses with its domain names, and users can access them without special rigging. Google was one of the first widely used sites to take public advantage of this, setting up ipv6.google.com, which maps to an IPv6 address for its home page.

Support for IPv6 is already baked into most popular operating-system software. It is incorporated into Windows XP and Vista, Mac OS X 10.3 “Panther” and later, and many flavours of Unix and Linux. But operating systems are only the taps of the plumbing system: a house’s other fixtures (like set-top boxes), inside pipes (broadband modems and routers), and feeder pipes (backbone routers) must also be upgraded for the full benefits of IPv6 to become available. In the meantime, IPv4 and IPv6 can co-exist by smuggling data addressed in one form inside packages addressed with the other.

The cost of the upgrade will be distributed across the internet’s many users, from consumers to companies to network operators, and will mostly be a gradual process. “The internet itself has grown organically—it’s not possible to implement or mandate a change across the network,” says Leslie Daigle, chief internet-technology officer at the Internet Society, a non-profit body that supports the development of internet standards. But some big network operators may have to upgrade in order to accommodate more devices. Comcast, an American cable operator, realised in 2005 that it might need 100m IP addresses by 2008, but would be able to get perhaps one-tenth of that number of IPv4 addresses. It has since converted the core of its network to IPv6.

Pressure to convert entire broadband networks to IPv6, right down to individual PCs, may come from an unexpected source, says Mr Vixie. “First-person, shoot-’em-up gaming and peer-to-peer file sharing works better if IPv6 is used,” he notes. And once consumers get a taste of the benefits, he says, the adoption of IPv6 should take off dramatically.

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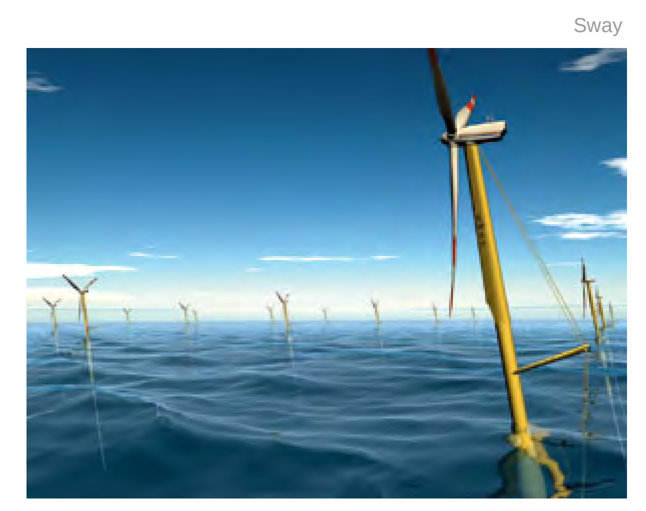
A new twist for offshore wind

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Energy: Floating wind-turbines are being developed that can be used at sea in deep water, and do not need to be permanently fixed in place

WINDS sweeping across New England, in the north-east of the United States, blow at an average of about four metres a second (m/s). But a few hundred metres offshore they blow more than twice as fast. This increase in speed is found offshore in much of the world. But although engineers know how to build turbines to generate electricity from offshore wind—mounting them on towers pounded deep into the seabed, or anchored by massive blocks of sunken concrete—they can do so only in waters up to about 40 metres deep.

Sway



Down on the farm

Now wind power could be taken into deeper waters. Building offshore wind farms is expensive: each turbine costs at least 50% more than one built on land. But the stronger winds out at sea can generate more electricity, and hence more revenue: wind blowing at 10m/s can produce five times as much electricity as wind blowing half as fast, and this greatly favours building more offshore wind farms, says Walter Musial, a senior engineer at the National Wind Technology Centre, a government research laboratory in Boulder, Colorado. Yet just 300-400 offshore wind turbines have been built worldwide, most of them in British or Danish waters. There are none in America. People think they ruin the view and harm the offshore environment.

Take, for instance, a project known as Cape Wind, based on plans by Energy Management, an American company, to build 130 turbines 10km (six miles) offshore in Nantucket Sound, Massachusetts. Although it is backed by a number of green groups, local opposition (not least from the allegedly verdant Kennedy family) has been fierce. Jim Gordon, Energy Management's boss, says "visceral" local protests have delayed the project by at least three years and cost his company millions of dollars.

But what if the turbines could be put much farther out to sea? Many experts say new technology now makes floating turbines feasible. These could be sited a long way from land. Devices known as "floaters" are already used to support more than two-thirds of the 4,000 or so oil and gas rigs in the Gulf of Mexico, says Paul Sclavounos, a marine engineer at the Massachusetts Institute of Technology. With funding from ConocoPhillips, Mr Sclavounos is developing a turbine floater for the windy North Sea. He expects an industry making floating wind-turbines to flourish in about five years. Others think it may take longer, but few doubt it will happen. Building turbines on land can be just as controversial, suitable locations for fixed-base shallow-water turbines are limited and a new generation of big turbines will need lots of space: only a couple can be placed in each square kilometre.

SWAY, a company based in Bergen, Norway, is developing turbine floaters that can operate in 150 metres of water. The firm, partly funded by Statoil, Norway's energy giant, estimates that each will cost about as much as a fixed-base turbine placed in 30 or 40 metres of water. Its design uses a hollow, buoyant cylinder that extends down from the tower to about 100 metres underwater. The cylinder is anchored to gravel ballast on the sea floor. SWAY plans to float a full-scale prototype in 2010.

In December a company called Blue H Technologies, based in Oosterhout in the Netherlands, placed a half-size prototype turbine about 20km off the coast of southern Italy in water 108 metres deep. It uses a flotation framework known as a "tension-leg platform", similar to that used to float oil rigs. Construction of full-size floating turbines for the site has now begun. The company has had to convince Italy's naval-certification agency that a floating turbine could withstand a "100-year wave"—which in that part of the world amounts to a 9.7-metre wall of water. When it blows at sea, it can blow very hard. That presents difficulties, but it also provides opportunities.

Monitor

Fridges of the world, unite!

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From The Economist print edition

Energy efficiency: Smarter appliances that turn themselves down at times of peak demand should mean fewer brown-outs

Illustration by Belle Mellor

IF THE millions of refrigerators, electric water-heaters and air conditioners attached to the average power grid were less selfish, and adjusted their energy consumption according to the state of that grid, there would be less need to run spare coal-fired generating capacity on the off-chance that it might be required—and intermittent power sources, such as the wind, could be accommodated more easily. These things would save money and cut carbon-dioxide emissions. More responsible fridges might even reduce the number of power cuts and brown-outs. But how do you organise such collaboration? Several groups of researchers have been thinking about this, and their answers are now being tested.

The most advanced project is the brainchild of the American Department of Energy's Pacific Northwest National Laboratory (PNNL). Last year it completed the first residential trial of its "Grid Friendly Appliance" controller—a small device that listens to the AC-frequency hum of the electricity supplied by the grid. If the hum goes a little flat, that indicates too much demand on the grid, so whenever a controller notices the American standard 60Hz grid frequency dipping to 59.95Hz (something that usually happens at least once a day) it shuts off the heating element in the appliance it is regulating for two minutes. If, at the end of that time, the grid is still unstable, the element stays off for another two minutes, and so on until a maximum of ten minutes have elapsed.

The PNNL conducted its trial in collaboration with Whirlpool, a maker of domestic appliances. It recruited the inhabitants of 150 homes in the states of Oregon and Washington and fitted 150 dryers and 50 water heaters in those homes with the new controllers. In the dryers, the motor stayed on when the heating element was being turned off to reduce demand, so the drum still turned and the clothes did not crease—an important criterion for Whirlpool. Just turning off the heating element, but leaving the motor running, still reduces demand to a useful degree. At the end of the trial, which lasted a year, most residents said they had not noticed their appliances switching off and said that they had not been inconvenienced at all.

Having shown in this pilot that its technology could act as a "shock absorber" for the grid when demand peaks, PNNL plans to conduct a larger study, involving more than 1,000 homes, in 2009. Whirlpool also wants to try the idea out more widely, and to experiment with other functions that could safely be interrupted, such as the automatic defrosting feature found in some refrigerators.

Whereas PNNL's main interest is in shedding load at times of heavy demand, a small British firm called RLtec is exploring the idea that entire populations of fridges could be programmed to correct continuously for much smaller grid fluctuations, constantly adjusting their power demands rather like a car's cruise control. That, too, would improve efficiency and reduce the need for standby capacity.

RLtec is four months into a laboratory test in which 100 domestic fridge-freezers have been equipped with the firm's "Dynamic Demand" technology. This is a piece of software that operates within the electronic temperature-control loop of the fridge and makes subtle second-by-second adjustments to the amount of power drawn by the compressor unit, again in response to tiny variations in the frequency of the power grid. So far, according to Andrew Howe, the company's boss, there have been no adverse effects on the temperature inside the fridges or on the lifetimes of their compressors. RLtec is now putting together a team that includes people from Britain's national grid to test the system more rigorously. In a separate, government-sponsored study, Imperial College plans to install fridges fitted

with Dynamic Demand controllers in a number of homes to generate data on exactly how much power the system could save.

The first serious use of grid-responsive appliances, though, may be on grids of the smallest scale. Econnect Ventures, a British firm, is helping to prevent power cuts on islands that rely heavily on hydroelectric, wind and solar power, by equipping residents' houses with intelligent power plugs that switch off attached appliances when they detect that the grid is starting to become overloaded. And, building on successful projects on the islands of Foula and Rum in Scotland, and Kythnos in Greece, Econnect is also looking at how its load controllers could enable wind power to be used more efficiently on a wider scale. Every little helps.

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Monitor

Checks in the post

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From The Economist print edition

Illustration by Belle Mellor



Communications: A new tracking device, small enough to be slipped into an envelope, can pinpoint hold-ups within postal services

THE porters at Trinity College, Cambridge, were puzzled by the faded, handwritten letter. They did not recognise the addressee's name, and opened the envelope. Inside was a note which appeared to suggest a meeting; perhaps even a date. But that meeting probably never took place. The letter had been posted in March 1950—and had been lost in the mail for 56 years.

It is unusual for letters to go walkabout for that long, of course, but unexplained delays of a day or two are common. Postmarks can sometimes provide a clue about where the hold-up occurred. Usually, though, a lot of guesswork is involved. When post offices try to improve their service they sometimes send an electronic probe through the mail. This typically consists of a small motion-sensor which records the time of day whenever the envelope containing it is moved. This can show that a letter languished somewhere for hours, but exactly where it got stuck remains a matter of conjecture.

The GPS Letter Logger should change this. It is a device that uses the satellite-based Global Positioning System to find out exactly where it is. The probe takes advantage of the fact that the electronic circuitry needed to build a GPS receiver has shrunk in recent years. Not only is that good in itself, it also means that the equipment needs less power, so the batteries can be smaller as well. Small GPS trackers of this sort are already used to locate things like delivery trucks, and to find objects that have been stolen, such as cars and expensive consumer gizmos. But a bit of modification was needed to build one thin enough to fit into an envelope and then withstand being stuffed into sacks, thrown into delivery vans and run through automated sorting systems that shuffle letters at the rate of 12 a second.

The Letter Logger was developed by TrackingTheWorld, a company based in Burlingame, California. To travel undetected in the guise of a standard business letter, the device needed to fit into the most commonly used envelope (a number ten in America, which is about 100mm by 240mm). It had to be no more than a quarter of an inch (6.4mm) thick at any point, and capable of bending slightly. To complicate things, it also had to work in the vertical position, which is how letters travel in automated sorters. This meant the circuit board would be edge-on to the sky, the worst position to pick up the satellite signals needed to determine its position. Moreover, the device needed to be capable of doing all this while inside buildings and vehicles.

Usually, a GPS tracker transmits its position using a radio or mobile-phone connection. The United States Post Office did not require the Letter Logger to do this, however, in part because mail often travels in aircraft, and transmitting devices must be switched off during take-off and landing. Not having to transmit also helped to reduce the device's size.

The Letter Logger can be programmed to check its position every few minutes, over longer intervals, or only when a built-in motion detector senses movement, says Jude Daggett, of TrackingTheWorld. The journey log is stored on a standard micro-SD memory card to make it simple to use without any special software. This allows the log to be read by a laptop computer and displayed as a journey on Google Earth, the software giant’s popular world-mapping software. The inability to transmit does not greatly detract from its usefulness: if the probe’s log showed, for instance, that the envelope it was inside crawled along Interstate 405 before turning off to Los Angeles International Airport where, after a short delay, it suddenly zoomed off to Phoenix Sky Harbour, then it probably went by air.

But if it disappeared for half a century, unfortunately even future supercomputers would not be able to work out where it had been. If the probe is not delivered within a week or so, its battery goes flat.

Monitor

Mr Neutron

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From The Economist print edition

Security technology: A new scanning technology, which can see things X-rays cannot, could help to beef up the inspection of air freight

AIRLINE passengers might be forgiven for thinking that security inspections are already quite tight enough, thank you. For accompanied luggage, they probably are. But accompanied luggage is only a fraction of what aircraft carry around. The rest is commercial freight, which is harder to examine with the rigour that is applied to passengers' baggage.

Part of the reason is that when an X-ray machine is faced with a containerful of cargo, the image it produces may be confused by the large number of objects packed inside. In addition, X-rays are poor at distinguishing between objects of identical shape but different composition. That is particularly true if the objects are made of material with a low density—as both explosives and drugs are. Moreover, something hidden in a container that is opaque to X-rays will not be noticed at all.

Of course, other security measures, such as explosive sniffers, can be employed, and often are. But the most reliable alternative to X-ray scanning, hand-searching everything, is slow and expensive. The upshot is that contraband is frequently smuggled in cargo and one day a bomb may be, too.

A joint venture just announced by Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Nuctech Company, a security-equipment maker based in Beijing, is setting out to improve the situation by combining traditional X-ray scanning with a second scan using neutrons. In combination, the two techniques should be better at spotting threats than X-rays are alone.

The new system, adapted from mineral-analysis technology, exploits differences in the amount of X-ray and neutron energy absorbed by different types of material. By combining two sources of data it is easier to understand the nature of an object than if only one is employed.

The container to be examined passes on a conveyor belt into a tunnel shielded by steel and concrete to protect operators from radiation. The X-rays come from a standard X-ray machine. The neutrons are generated by bombarding a heavy form of hydrogen, called tritium, with a lighter isotope of the gas, called deuterium. The resulting collisions create helium atoms and a stream of neutrons.

The X-ray and neutron beams pass across the tunnel through the cargo and are detected on the other side. The detectors measure how much of each type of radiation got through. A computer then compares the results with the known absorption properties of different types of materials, to work out what the objects in the container are made from. It adds this information, suitably colour-coded, to the image. The whole process takes about a minute, and the scanner can be slotted into existing airport freight-handling systems. Security personnel can thus detect suspicious objects at a glance, and either clear the container for loading or redirect it for close inspection.

In trials conducted last year at Brisbane Airport, a prototype was able to detect a range of explosives, drugs and other contraband. The system can also distinguish nuclear materials, such as uranium, from other heavy metals, according to Nick Cutmore, a CSIRO researcher who is leading the project. And it can spot non-metallic materials, such as drugs and explosives, hidden inside large metal objects that are opaque to X-rays.

The CSIRO and Nuctech plan to conduct trials on the next version of the scanner in Beijing at the end of the year. If it works there, it will be offered for general sale, and a potential loophole in airport security will thus gradually be closed.

Monitor

Rummaging through the internet

Jun 5th 2008
From The Economist print edition

Computing: New techniques to navigate and gather information online promise to revolutionise web browsing

Illustration by Belle Mellor

THE web has changed in many ways since it first emerged in the mid-1990s. The first web pages contained only text, and there was a big debate about whether pictures should be allowed. Today, by contrast, it is quite normal for pages to be bursting with photos, animated graphics, video clips, music and chunks of software, as well as text. In one respect, however, the web is unaltered: the clickable hyperlinks between pages are still the way users get from one page to another.

But now a Norwegian computer scientist named Frode Hegland has cooked up a new sort of navigation. His free software, a browser add-on called Hyperwords, makes every single word or phrase on a page into a hyperlink—not just those chosen by a website's authors. Click on any word, number or phrase, and menus and sub-menus pop up. With a second click, it is possible to translate text into many languages, obtain currency or measurement conversions, and retrieve related photos, videos, academic papers, maps, Wikipedia entries and web pages fetched by Google, among other things.

All that information, of course, can already be accessed by web users willing to root around, opening a series of new browser windows or tabs. The goal of Hyperwords, Mr Hegland says, is "reducing the threshold" of satisfying curiosity, by making the quest faster and easier. Later this year he will release a new version that extends this trick beyond the web browser, turning any word in any window into a clickable "hyperword".

Hyperwords is a relatively new idea, and so far it has fewer than 200,000 users. But it is one of a number of new initiatives designed to transform internet browsing, by providing more connections between data, presenting information in new ways and making it easier to navigate. Another example is Cooliris, a start-up based in Silicon Valley, which has invented a browser add-on called Previews. Hovering the mouse pointer over a link causes a small preview of the linked page to pop up in a tiny window, making it easier to decide whether to click through to the page or not. More than 2m people have downloaded the free software since January.

Another Cooliris application, PicLens, takes images fetched from Google, Flickr, Facebook, eBay and other websites and displays them, free of the clutter on each image's webpage, on a spectacular full-screen, 3-D wall. Viewers can zip left and right, zooming in or pulling back, to scan hundreds of images in seconds. Images can be clicked for full-screen display, or shown in context on their original webpage. The free software has been downloaded over 5m times. A new version, released in April, turns YouTube searches into a clutter-free wall of videos in a similar fashion. Austin Shoemaker, technology chief at Cooliris, says internet users are "subconsciously frustrated" with clicking "next, next, next" to view content.

Immersive browsing

PicLens provides a glimpse of a possible future for the web: as a three-dimensional environment, in which users move through clusters of pages that appear to float in space, pushing unwanted ones away and arranging others in logical groupings. This approach takes advantage of people's natural spatial memory. John Maeda, the president of the Rhode Island School of Design, says people find it hard to navigate the flood of online information in two dimensions, and rarely open more than a few windows at

a time. With a 3-D browser over 100 windows can be visible at once, even on a laptop screen.

Mr Maeda, until recently a senior researcher at the Massachusetts Institute of Technology, worked on a forthcoming 3-D browser called E15 which uses a special mouse to allow viewers to move around in a 3-D space. Researchers have been kicking around 3-D browsers in labs for years, but they never came to much. Only in the past year or so have ultra-fast internet connections and powerful computers become commonplace enough to make mass-market 3-D browsing feasible.

SpaceTime, a start-up based in New York, has developed a 3-D browser which has been downloaded over 2m times since its launch in January. SpaceTime's boss, Edward Bakhash, says the inspiration came from video games, and the sleek animated graphics of Apple's iPhone. Software developers compete, of course, but Mr Bakhash says there is a feeling that the whole community is working hard to "help usher in the next paradigm".

The movement will get a boost in late July, when Second Life, a popular 3-D virtual world, incorporates a feature that will allow inhabitants to post web pages on walls. Joe Miller, vice-president of technology at Linden Labs, the company in San Francisco, California, that runs Second Life, says 2-D web browsing is usually solitary. Browsing in Second Life, however, will be a social activity, because users strolling virtually through the world can gather and chat next to web pages.

A browser called 3B, developed by a firm of the same name in London, also makes browsing social. Users search for a product, and pictures of the results are arranged into the aisles of a virtual shop. Shoppers can mill about to get a better look, and chat via instant messaging with other people searching for similar things. Over 200 retailers, including Barnes & Noble, Wal-Mart and Gap, display their wares in 3B. A few employ shop-assistants to answer shoppers' questions. 3B takes a cut of sales initiated in its browser. Nicky Morris, the firm's boss, says business is "absolutely phenomenal" because women in particular stay in shops longer when they are not alone.

Microsoft is also developing a 3-D browser, called Deepfish, for mobile devices. Many other 3-D browsers are in the pipeline. It is seductive technology that can look gorgeous. But Dave Farber, a computer scientist at Carnegie Mellon who is one of the internet's founding fathers, says the enthusiasm for cool visuals will be replaced by a realisation that 3-D navigation is a much-needed tool. He points to Hyperwords, which he thinks will become widely used (and imitated). It allows people to make more connections of the kind that interest them. A user can add an option, say, to search for any clicked-on word or phrase in her favourite Bolivian and Peruvian newspapers. Hyperwords users can also effortlessly place clicked-on text into a blog, e-mail, instant message or Facebook profile. These new connections add "depth" to words and ideas, Mr Farber says, but create incredibly complex networks. Without 3-D maps, he says, we may lose our bearings.

Rational consumer

Changing gears

Jun 5th 2008
From The Economist print edition

Automotive technology: A baffling range of new types of car gearbox has broadened the choice far beyond manual and automatic

Alan Sanders

THERE are now so many choices to make when buying a new car that the makers often provide a click-through configuration service on their websites, so the combinations of model, engine, colour, interior trim, entertainment system and so forth can be explored by customers. When it comes to the transmission, the choice used to be a simple one: automatic or manual? And most buyers knew exactly what they wanted; nine out of ten drivers in America would choose automatics, and eight out of ten Europeans would go for manuals. But now a range of new gearboxes is blurring the distinction—and giving car buyers a lot more to think about.

Confusingly, carmakers use many different terms and brand names for these new transmissions, and new types are being unveiled all the time. To make matters worse, many car salesmen do not know much about them, if complaints on motoring blogs are anything to go by. The new gearboxes are perhaps best described as automated-manuals, though sometimes they are called semi-automatics or clutchless-manuals, which is a bit misleading.

Most are based on manual gearboxes, but use electronic actuators to shift gears and to operate a built-in clutch. This is a very different arrangement from a standard automatic, which uses a more complex system of “planetary” gears, and transmits power to the wheels through a torque converter, a hefty piece of kit that takes the place of a clutch. Some standard automatics, such as the Porsche-developed Tiptronic system, can also operate in a semi-automatic mode when equipped with manual overrides.

Carmakers have played around with gearboxes that are half-manual and half-automatic for decades. So what has caused the sudden renewal of interest? The fact that electronics are now powerful and robust enough to make automated manuals which are far better, and reliable enough to do away with the clutch pedal altogether. Some people in the car industry think pedal clutches will now disappear, just as carburettors did after electronically controlled fuel-injectors came in.

Hardcore stick-shifters, who think automatics are for wimps, will laugh at that. But they should try something like a Ferrari 612 Scaglietti fitted with an F1A automated-manual gearbox. The car has no gearstick and no clutch pedal, but it does have a button marked “auto”. Press this, and instead of using the shift levers on the steering wheel to change gear manually, a computer takes over. It changes gear as sedately as a family saloon when ambling along, but driven aggressively it turns into a different beast. Software analyses the style of driving and selects the appropriate shift patterns. It can change gear in microseconds, which is much faster than any human can. Hardly surprisingly, the gearbox was derived from an automated manual used in Formula 1 cars.

But it is not just supercars that are being fitted with these new gearboxes. They are also appearing in smaller, cheaper cars. In Europe the Vauxhaul/Opel Corsa, for instance, is offered with an automated manual called Easytronic. Standard automatics have generally remained a bit too expensive, heavy and fuel-thirsty for use in small cars, but automated manuals are lighter, less complex and cheaper to produce. In part this is because gear changes are more accurate when carried out under computer control, so gearboxes do not have to be made extra rugged.

One system that has set the pace is the DualTronic produced by America’s BorgWarner, which is known

as a Direct Shift Gearbox when fitted in a Volkswagen, and an s-Tronic in an Audi. This is a dual-clutch transmission, which works rather like two gearboxes combined into one, with one gear driving the car while another stands ready to take over. One clutch operates first, third and fifth gear, and the other looks after second, fourth and sixth. Software detects how the car is being driven and pre-selects which gear should get ready to be engaged next. So, if accelerating in third, fourth gear will be ready for the change up. Gear selection can be left to the computer, or controlled by the driver.

Taking over

In such systems the computer will not allow foolish manual changes. It will change down, for instance, if the engine is labouring up a steep hill in a gear that is too high. This level of cleverness allows carmakers to program the gearboxes to maximise fuel efficiency and minimise emissions. The bonus for drivers is fast, smooth gear changes, and no clutch pedal to press. The buyer is still likely to pay a premium for an automated manual, although that could change if they become more universal. They are heading that way: BorgWarner alone expects soon to be building 2.3m DualTronics a year.

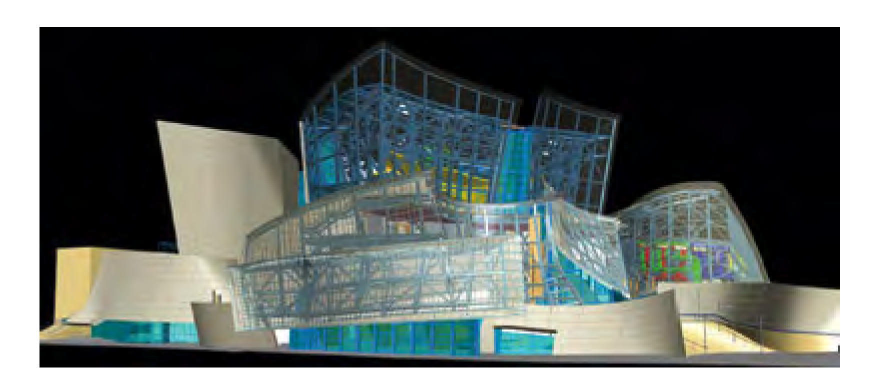
How automated manuals will affect sales of continuously variable transmissions (CVTs) remains to be seen. Instead of cogs, CVTs use belt systems that provide an infinite number of gear ratios. They tend to be more popular in Asia, but have not sold in huge numbers. As rival technologies add more gear ratios—ZF, a German gearbox-maker, recently announced an eight-speed automatic—CVTs could be overtaken. And just to blur things even further, Mercedes has launched a new gearbox called the Speedshift MCT, which is a planetary-geared automatic in which the torque converter has been replaced by an automated clutch. The only sure way for a car buyer to pick the right sort of gearbox is to arrange lots of test drives.

Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Computing

From blueprint to database

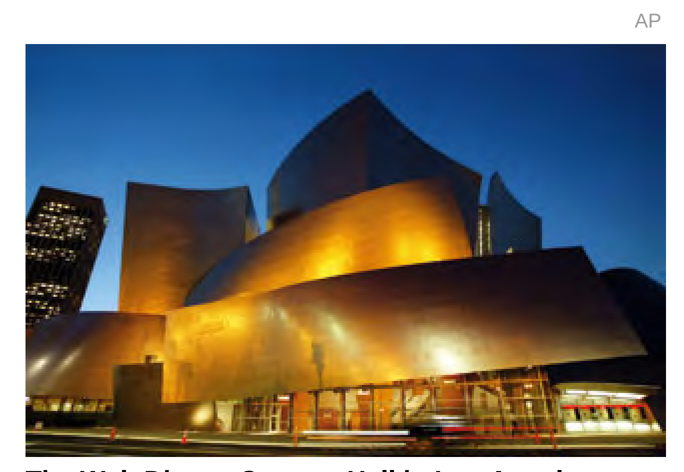
Jun 5th 2008
From The Economist print edition



Computing: Aircraft and cars are designed using elaborate digital models. Now the same idea is being applied to buildings

THE advent of powerful computers has enabled architects to produce stunning images of new buildings and other structures. No proposal for a big project is complete without a photorealistic rendering of how the final design will look, or even a virtual walk-through. Perhaps surprisingly, however, those fancy graphics tend to be used only for conceptual purposes and play no role in the detailed design and construction of the finished structure. For the most part, this is still carried out with old-fashioned two-dimensional elevation and plan drawings, created by hand or using computer-aided design (CAD) software. “It’s still a 2-D profession,” says Shane Burger, an associate architect at Grimshaw, the firm that designed the Eden Project, a domed botanical garden in Cornwall, at the south-western tip of England.

AP



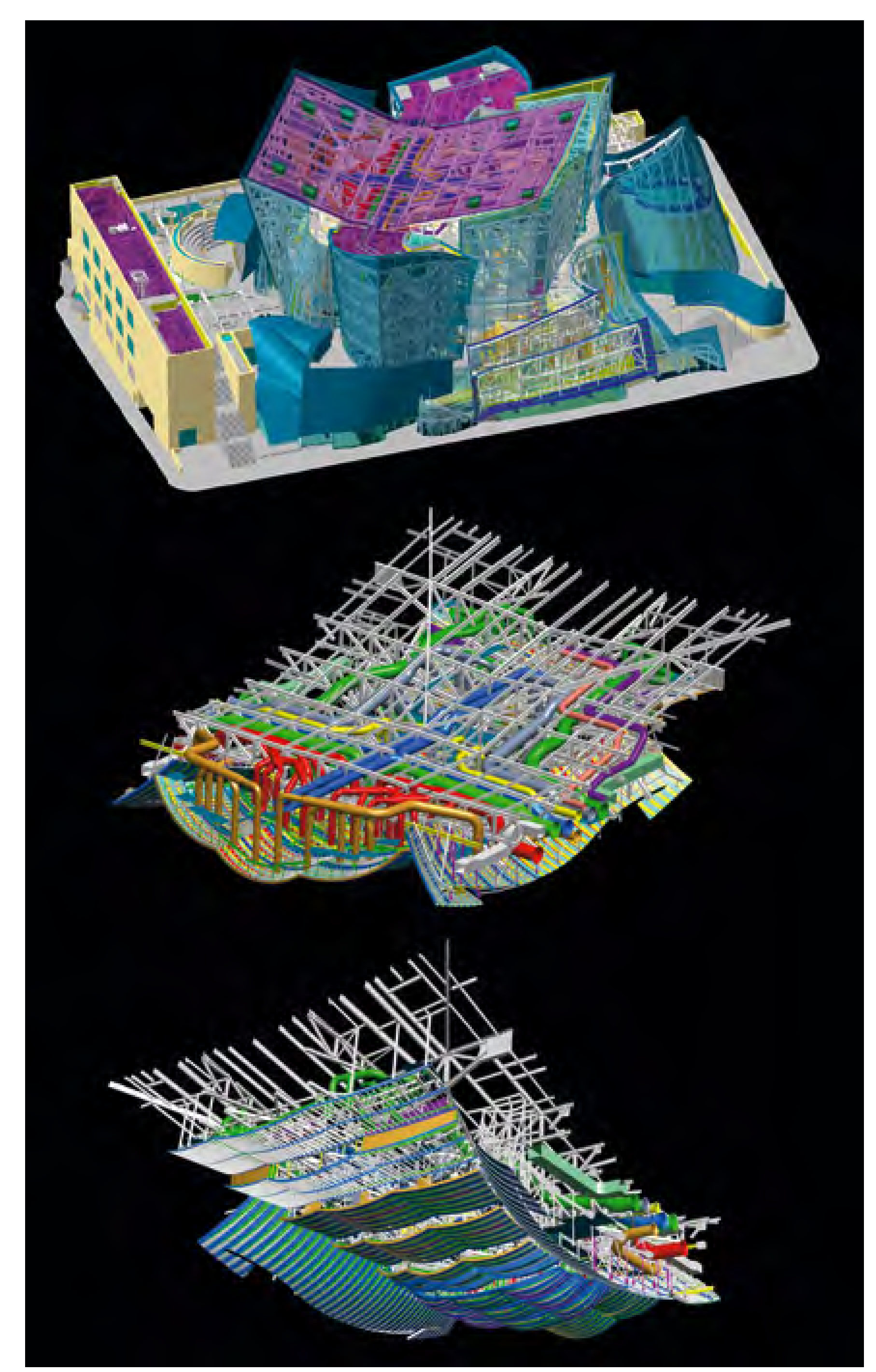
The Walt Disney Concert Hall in Los Angeles, as a digital model (top) and in reality

And therein lies a problem, for even when it is generated by computer, a 2-D line drawing is just that: a bunch of lines. “There’s no structure that tells you that this line is a wall, stair or window,” says Chuck Eastman, a professor of architecture and computing at the Georgia Institute of Technology in Atlanta. “If you changed a window you would have to rebuild the wall around it to make it bigger or smaller.” Given that even a small building can require thousands of drawings, and producing drawings traditionally accounts for a big chunk of an architect’s fee, making changes can be a costly and time-consuming business. “If you adjust the shape of a building late in the game, you would have a lot of drawing to do,” says Mr Burger. Moreover, such drawings give no indication of the cost of construction. Instead, architects have to keep a schedule of materials that they continually update as the design progresses. Alter the design, and you also have to alter the entire schedule.

That is why Dr Eastman and others have long championed a more powerful approach, called building-information modelling (BIM). This involves representing a building as a full, three-dimensional computer model, with an associated database. It is as big a leap forward from conventional CAD as a computer is from a slide rule, says Dr Eastman. Instead of using just lines, which can only be interpreted by people, the model is based on objects, which are solid shapes or voids with their own properties. The model also includes information about the relationships between these objects, so that when one object is changed (a window is made bigger, say) any related objects are automatically updated (the wall surrounding it gets thicker). Both 3-D views and traditional 2-D drawings can then be generated from the model.

An immediate advantage of this approach is that the software can identify any mistakes within a design. Using 2-D drawings it can be hard to spot inconsistencies, such as measurements that do not add up, or geometric clashes. “A structural engineer could end up with a beam in one place while a mechanical engineer has an air vent in the same location,” says William Mitchell, a professor of architecture at the Massachusetts Institute of Technology (MIT). Experienced architects and engineers learn to catch such errors, but they often become apparent only after construction has begun, pushing up costs, says Dr Mitchell. As a result, inconsistencies can account for 2% of a typical construction budget, and clashes for up to 5%.

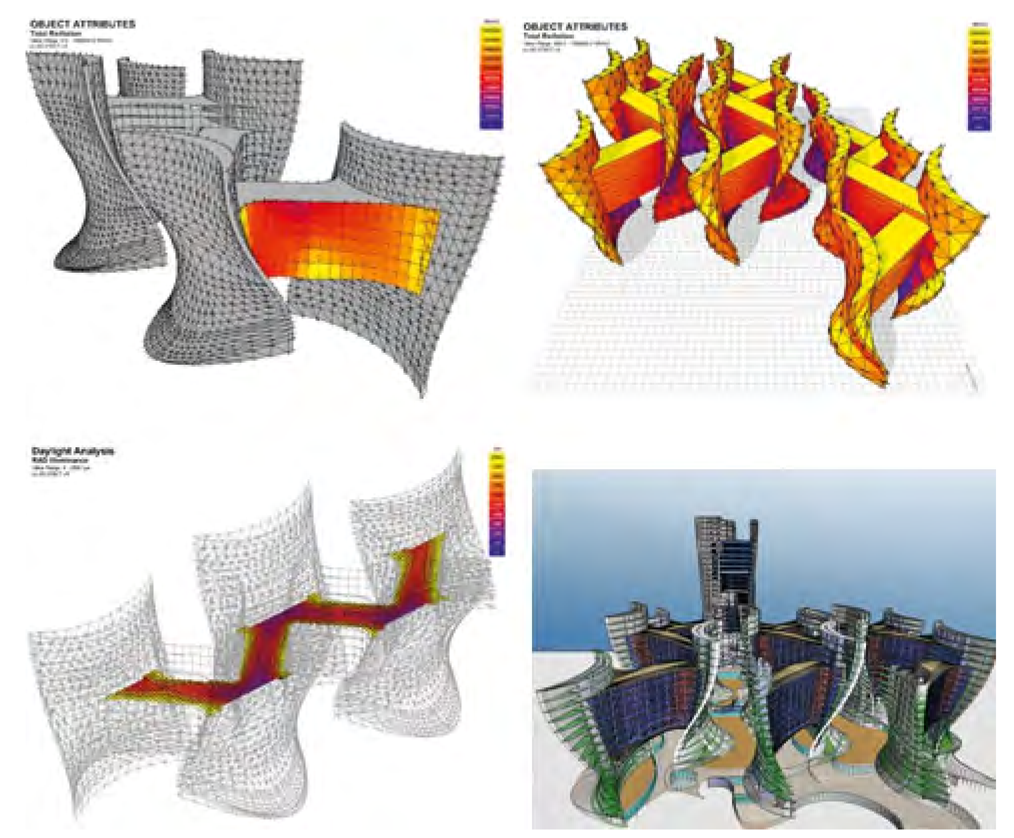
As well as spotting such “spatial conflicts” and saving money, BIM can also dramatically improve the communication and co-ordination between architects and engineers. Drawings have been the main documents of a construction project, says Dr Mitchell. With BIM, the 3-D model becomes the main reference, and any 2-D drawings produced from it merely perform a minor role. The model also makes it possible to calculate the quantities of materials needed, and hence construction cost.



Once a computer model of a building has been created, it is possible to extract detailed plans of particular subsystems, such as cooling, water and electrical wiring

As BIM software becomes more powerful, the model is no longer just a 3-D representation of a building, but is in a sense a digital prototype or simulation. The idea that an aircraft's first flight might take place in the memory of a computer, which uses fluid-dynamics software to calculate the airflow over its wings, is becoming commonplace. Why not apply the same idea to a building? Finite-element analysis can determine its structural properties; with the right software, there is no reason why the building's energy consumption, lighting, heat flow, acoustics and regulatory compliance cannot all be calculated too, suggests Dr Eastman. This has already been done, for example, to calculate how sunlight will affect internal temperatures at the new Qatar Petroleum Complex Project.

Dr Eastman has been talking about this sort of thing since the 1970s, when the first BIM systems were developed. "But architects aren't really technology innovators," he admits. So until recently, BIM has largely been ignored—except, that is, by a handful of pioneering architects whose radical designs have required it.



Skidmore, Owings & Merrill integrated a model of the Qatar Petroleum Complex Project with software to determine how sunlight would affect internal temperatures

BIM was, for example, used to design the Eden Project's geodesic domes, says Mr Burger. Another early adopter is Frank Gehry. His uniquely warped and fluid style of architecture—exemplified by the Guggenheim Museum in Bilbao, the Walt Disney Concert Hall in Los Angeles (pictured at the beginning of this article) and the Ray and Maria Stata Centre at MIT—results in structures so complex that it might not have been possible to build them at all without the help of BIM. But now other architects are catching up. America's General Services Administration (GSA), the federal agency that oversees civilian buildings, ordered the use of BIM technology for all GSA-funded projects starting in 2007. Other countries have similar policies.

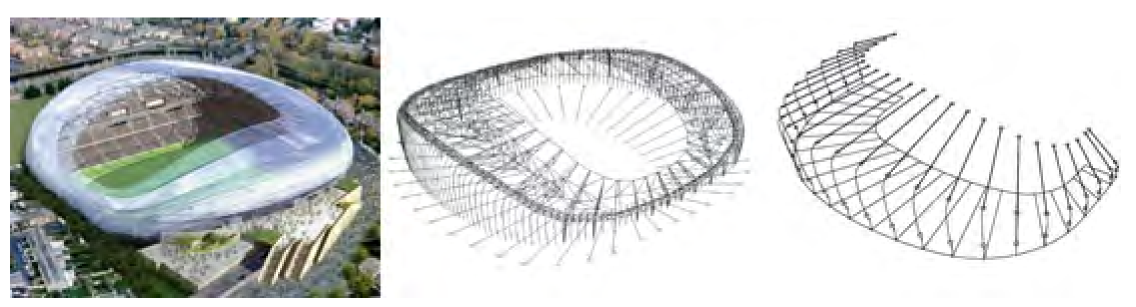
Here comes BIM

Two factors lie behind the recent shift. The first is the availability of off-the-shelf BIM software. Until recently, architectural firms pretty much had to develop their own BIM tools. Mr Gehry, for example, took a product-design tool called CATIA, developed by Dassault Systèmes, a French company, and tailored it to his own specifications when designing the Guggenheim Museum. It is now marketed as an architectural tool, called Digital Project, by Gehry Technologies, a company founded by Mr Gehry in 2002. Architects really started to take note that same year when Autodesk, a leading maker of CAD software, bought a smaller BIM company called Revit, says Dr Eastman. It had the same effect as when Microsoft invests in a new technology, he says: "It legitimised it."

The second factor is a concern about the construction industry's inability to predict its costs. Bids for new projects are usually tendered at the design stage, and the cost estimates often turn out to be far too optimistic once construction begins. "We should be planning in advance how we put our buildings together," says Mr Burger. As a result, there is a lot of work being done to develop more accurate cost-estimation modules for use with BIM tools. "We can do cost estimation much better now than five years ago," says Dr Eastman.

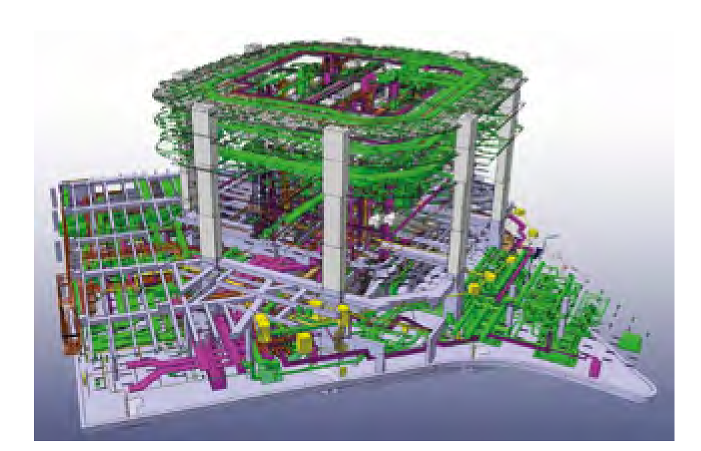
The spread of BIM itself could help, as suppliers of building materials and components start to make information about their products available in a format that can be applied to objects in BIM models. This will enable architects to build up a design using representations of real products, from steel girders to floor panels to light fittings, while keeping track of costs, structural properties and so forth. Manufacturers have been waiting for the leading BIM-software companies to agree on common formats. Now an agreement is indeed in sight and when it is in place, adoption will happen very quickly, says Mr

Burger.


Digital models of Dublin's new Lansdowne Road Stadium, designed by HOK Sport

BIM will also enable architects to produce more efficient designs, thus reducing costs. “Historically, information was expensive and materials and energy were cheap,” says Dennis Shelden, chief technology officer at Gehry Technologies. Working out the exact properties required of every single element of a building was impractical, so a worst-case scenario would be used, resulting in some elements using more resources than necessary. “Now the cost of information is going down, and the cost of materials and energy is going up,” says Dr Shelden. “We’re at an inflection point where doing localised, honed engineering is much more economical.” The exact properties of every element can now be calculated precisely, and they can then be made individually using robotic cutting equipment.

The usefulness of BIM extends beyond design and construction. The model can also help to streamline the maintenance and management of the building, by showing where pipes run, for example, or listing the exact parts used in the heating and cooling systems. Having asked for BIM in new buildings, the GSA has even gone back and created models for several old ones, so as to simplify the retrofitting of security systems.


Swire Properties' One Island East Project in Hong Kong won an award for its use of BIM

As well as having practical and economic benefits, BIM software will start to influence the designs that architects come up with. Enabling them to experiment more freely, without constant redrawing and recalculation, could help to liberate them from today’s engineering constraints. The ability to nudge and tweak a design, experiment with different approaches and immediately see the cost, structural and energy-consumption implications of those changes could lead to more imaginative architecture. Mr Gehry’s work may provide a glimpse of this future. Already, universities are turning out a new generation of architects and engineers trained in the new tools.

For Dr Eastman, who has seen many fellow BIM advocates retire or die before the technology was adopted, the transformation is hugely rewarding. And there appears to be no going back. “In ten years’ time there will be no drawings,” he says, “and ‘back to the drawing board’ will just become an historic phrase.”

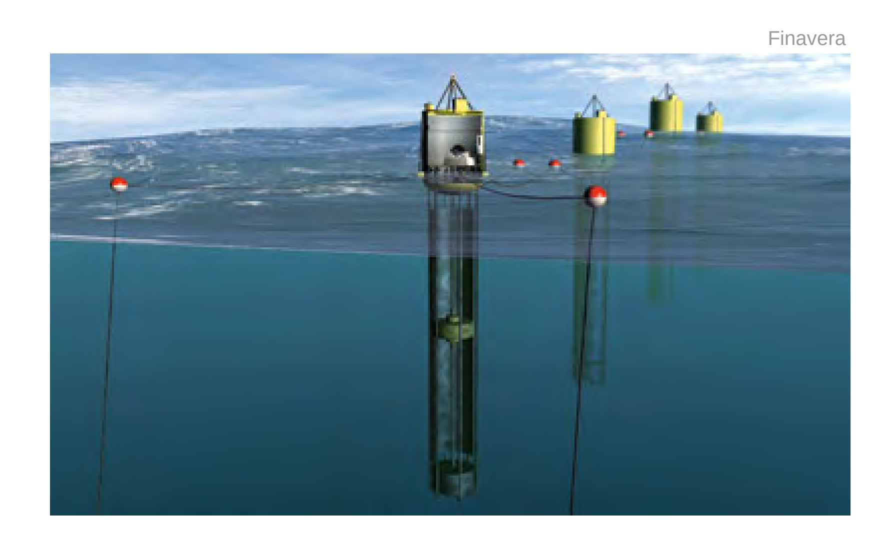

PRINT EDITION
TECHNOLOGY QUARTERLY

Wave power

The coming wave

Jun 5th 2008
From The Economist print edition

Finavera



Energy: Enthusiasm for renewable energy means wind turbines and solar panels are popping up all over the place. But what happened to wave power?

YOU only have to look at waves pounding a beach, inexorably wearing cliffs into rubble and pounding stones into sand, to appreciate the power of the ocean. As soaring oil prices and concern over climate change give added urgency to the search for new, renewable sources of energy, the sea is an obvious place to look. In theory the world's electricity needs could be met with just a tiny fraction of the energy sloshing around in the oceans.

Alas, harnessing it has proved to be unexpectedly difficult. In recent years wind farms have sprouted on plains and hilltops, and solar panels have been sprinkled across rooftops and deserts. But where the technology of wind and solar power is established and steadily improving, that of wave power is still in its infancy. The world had to wait until October 2007 for the first commercial wave farm, consisting of three snakelike tubes undulating with the Atlantic swell off the coast of Portugal.

In December Pacific Gas & Electric, an American utility, signed an agreement to buy electricity from a wave farm that is to be built off the coast of California and is due to open in 2012. Across the world many other wave-power schemes are on the drawing board. The story of wave power, however, has been one of trials and tests followed by disappointment and delays. Of the many devices developed to capture wave energy, none has ever been deployed on a large scale. Given wave power's potential, why has it been so hard to get the technology to work—and may things now be about to change?

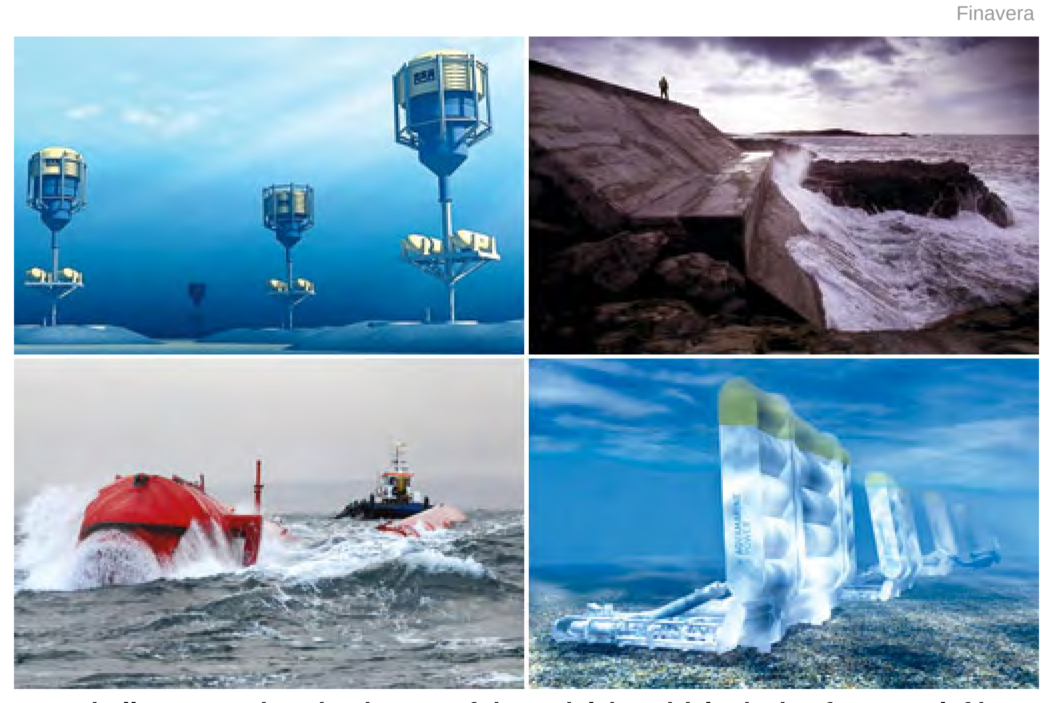
The first patents for wave-power devices were issued in the 18th century. But nothing much happened until the mid-1970s, when the oil crisis inspired Stephen Salter, an engineer at the University of Edinburgh, in Scotland, to develop a wave generator known as Salter's Duck. His design contained curved, floating canisters, each the size of a house, that would be strung together and then tethered to the ocean floor. As the canisters, known as Ducks, were tossed about by the waves, each one would rock back and forth. Hydraulics would convert the rocking motion to rotational motion, which would in turn drive a generator. A single Duck was calculated to be capable of generating 6 megawatts (MW) of electricity—enough to power around 4,000 homes. The plan was to install them in groups of several dozen.

Initial estimates put the cost of generating electricity in this way at nearly $1 per kilowatt hour (kWh), far more than nuclear power, the most expensive electricity at the time. But as Dr Salter and his team improved their design, they managed to bring the cost-per-kWh down to the cost of nuclear power. Even so, the research programme was shut down by the British government in 1982. The reasons for this were not made public, but it is widely believed to have happened after lobbying by the nuclear industry. In

testimony to a House of Lords committee in 1988, Dr Salter said that an accurate evaluation of the potential of new energy sources would be possible only when “the control of renewable energy projects is completely removed from nuclear influences.”

Salter’s Duck never took to the seas, but it sparked interest in the idea of wave power and eventually helped to inspire other designs. One example is the Pelamis device, designed by some of Dr Salter’s former students, who now work at Pelamis Wave Power, a firm based in Scotland. Three such devices, each capable of generating up to 750kW, have been deployed off the coast of Portugal, and dozens more are due to be installed by 2009. There are also plans for installations off Orkney in Scotland and Cornwall in England.

Finavera



Wave hello to Aquaboy (at the top of the article) and (clockwise from top left) AWS Ocean Energy's submerged buoy; Limpet; Oyster; and Pelamis

As waves travel along the 140-metre length of the snakelike Pelamis, its hinged joints bend both up and down, and from side to side. This causes hydraulic rams at the joints to pump hydraulic fluid through turbines, turning generators to produce electricity. Pelamis generators present only a small cross-section to incoming waves, and absorb less and less energy as the waves get bigger. This might seem odd, but most of the time the devices will not be operating in stormy seas—and when a storm does occur, their survival is more important than their power output.

Oh buoy

The Aquabuoy, designed by Finavera Renewables of Vancouver, takes a different approach. (This is the device that Pacific Gas & Electric hopes to deploy off the California coast.) Each Aquabuoy is a tube, 25-metres long, that floats vertically in the water and is tethered to the sea floor. Its up-and-down bobbing motion is used to pressurise water stored in the tube below the surface. Once the pressure reaches a certain level, the water is released, spinning a turbine and generating electricity.

The design is deliberately simple, with few moving parts. In theory, at least, there is very little to go wrong. But a prototype device failed last year when it sprang a leak and its bilge-pump malfunctioned, causing it to sink just as it was due to be collected at the end of a trial. Finavera has not released the results of the trial, which was intended to measure the Aquabuoy’s power output, among other things. The company has said, however, that Aquabuoy will be profitable only if each device can generate at least 250kW, and that it has yet to reach this threshold.

Similar bobbing buoys are also being worked on by AWS Ocean Energy, based in Scotland, and Ocean Power Technologies, based in Pennington, New Jersey, among others. The AWS design is unusual because the buoys are entirely submerged; the Ocean Power device, called the PowerBuoy, is being tested off the coast of Spain by Iberdrola, a Spanish utility.

The Oyster, a wave-power device from Aquamarine Power, another Scottish firm, works in an entirely different way. It is an oscillating metal flap, 12 metres tall and 18 metres wide, installed close to shore. As the waves roll over it, the flap flexes backwards and forwards. This motion drives pistons that pump seawater at high pressure through a pipe to a hydroelectric generator. The generator is onshore, and can be connected to lots of Oyster devices, each of which is expected to generate up to 600kW. The idea is to make the parts that go in the sea simple and robust, and to keep the complicated and delicate bits out of the water. Testing of a prototype off the Orkney coast is due to start this summer.

The logical conclusion of this is to put everything onshore—and that is the idea behind the Limpet. It is the work of Wavegen, a Scottish firm which is a subsidiary of Voith Siemens Hydro, a German hydropower firm. A prototype has been in action on the island of Islay, off the Scottish coast, since 2000. The Limpet is a chamber that sits on the shoreline. The bottom of the chamber is open to the sea, and on top is a turbine that always spins in the same direction, regardless of the direction of the airflow through it.

As waves slam into the shore, water is pushed into the chamber and this in turn displaces the air, driving it through the turbine. As the water recedes, air is sucked back into the chamber, driving the same turbine again. The Limpet on Islay has three chambers which generate an average of 100kW between them, but larger devices could potentially generate three times this amount, according to Wavegen. Limpets may be built into harbour breakwaters in Scotland and Spain.

Dozens of wave-energy technologies are being developed around the world: ideas, in other words, are not what has held the field back. So what has? Tom Thorpe of Oxford Oceanics, a consultancy, blames several overlapping causes. For a start, wave energy has lagged behind wind and solar, because the technology is much younger and still faces some big technical obstacles. “This is a completely new energy technology, whereas wind and photovoltaics have been around for a long time—so they have been developed, rather than invented,” says Mr Thorpe.

The British government’s decision to shut its wave-energy research programme, which had been the world’s biggest during the 1970s, set the field back nearly two decades. Since Britain is particularly well placed to exploit wave energy (which is why so many wave-energy companies come from there), its decision not to pursue the technology affected wave-energy research everywhere, says Mr Thorpe. “If we couldn’t do it, who could?” he says.

Once interest in wave power revived earlier this decade, practical problems arose. A recurring problem, ironically enough, is that new devices underestimate the power of the sea, and are unable to withstand its assault. Installing wave-energy devices is also expensive; special vessels are needed to tow equipment out to sea, and it can be difficult to get hold of them. “Vessels that could potentially do the job are all booked up by companies collecting offshore oil,” says Trevor Whittaker, an engineer at Queen’s University in Belfast who has been part of both the Limpet and Oyster projects. “Wave-generator installation is forced to compete with the high prices the oil industry can pay.”

Another practical problem is the lack of infrastructure to connect wave-energy generators to the power grid. The cost of establishing this infrastructure makes small-scale wave-energy generation and testing unfeasible; but large-scale projects are hugely expensive. One way around this is to build a “Wave Hub”, like the one due to be installed off the coast of Cornwall in 2010 that will provide infrastructure to connect up wave-energy arrays for testing.

Expect flotations

But at last there are signs of change. Big utilities are taking the technology seriously, and are teaming up with wave-energy companies. Venture-capitalists are piling in too, as they look for new opportunities. Several wave-energy companies are thought to be planning stockmarket flotations in the coming months. Indeed, such is investors’ enthusiasm that Mr Thorpe worries that things might have gone too far. A big failure could tarnish the whole field, just as its prospects look more promising than ever.

Whether one wave-energy device will dominate, or different devices will suit different conditions, remains to be seen. But wave energy’s fortunes have changed. “We have to be prepared for some spectacular failures,” says Mr Thorpe, “but equally some spectacular successes.”


PRINT EDITION
TECHNOLOGY QUARTERLY

Case history

Tapping the oceans

Jun 5th 2008
From The Economist print edition

EPA



Environmental technology: Desalination turns salty water into fresh water. As concern over water's scarcity grows, can it offer a quick technological fix?

THERE are vast amounts of water on earth. Unfortunately, over 97% of it is too salty for human consumption and only a fraction of the remainder is easily accessible in rivers, lakes or groundwater. Climate change, droughts, growing population and increasing industrial demand are straining the available supplies of fresh water. More than 1 billion people live in areas where water is scarce, according to the United Nations, and that number could increase to 1.8 billion by 2025.

One time-tested but expensive way to produce drinking water is desalination: removing dissolved salts from sea and brackish water. Its appeal is obvious. The world's oceans, in particular, present a virtually limitless and drought-proof supply of water. "If we could ever competitively—at a cheap rate—get fresh water from salt water," observed President John Kennedy nearly 50 years ago, "that would be in the long-range interest of humanity, and would really dwarf any other scientific accomplishment."

According to the latest figures from the International Desalination Association, there are now 13,080 desalination plants in operation around the world. Together they have the capacity to produce up to 55.6m cubic metres of drinkable water a day—a mere 0.5% of global water use. About half of the capacity is in the Middle East. Because desalination requires large amounts of energy and can cost several times as much as treating river or groundwater, its use in the past was largely confined to wealthy oil-rich nations, where energy is cheap and water is scarce.

But now things are changing. As more parts of the world face prolonged droughts or water shortages, desalination is on the rise. In California alone some 20 seawater-desalination plants have been proposed, including a $300m facility near San Diego. Several Australian cities are planning or constructing huge desalination plants, with the biggest, near Melbourne, expected to cost about $2.9 billion. Even London is building one. According to projections from Global Water Intelligence, a market-research firm, worldwide desalination capacity will nearly double between now and 2015.

Not everyone is happy about this. Some environmental groups are concerned about the energy the plants will use, and the greenhouse gases they will spew out. A large desalination plant can suck up enough electricity in one year to power more than 30,000 homes.

The good news is that advances in technology and manufacturing have reduced the cost and energy requirements of desalination. And many new plants are being held to strict environmental standards. One recently built plant in Perth, Australia, runs on renewable energy from a nearby wind farm. In addition, its modern seawater-intake and waste-discharge systems minimise the impact on local marine life. Jason

Antenucci, deputy director of the Centre for Water Research at the University of Western Australia in Perth, says the facility has “set a benchmark for other plants in Australia.”

References to removing salt from seawater can be found in stories and legends dating back to ancient times. But the first concerted efforts to produce drinking water from seawater were not until the 16th century, when European explorers on long sea voyages began installing simple desalting equipment on their ships for emergency use. These devices tended to be crude and inefficient, and boiled seawater above a stove or furnace.

An important advance in desalination came from the sugar industry. To produce crystalline sugar, large amounts of fuel were needed to heat the sugar sap and evaporate the water it contained. Around 1850 an American engineer named Norbert Rillieux won several patents for a way to refine sugar more efficiently. His idea became what is known today as multiple-effect distillation, and consists of a cascading system of chambers, each at a lower pressure than the one before. This means the water boils at a lower temperature in each successive chamber. Heat from water vapour in the first chamber can thus be recycled to evaporate water in the next chamber, and so on.

No salt, please

This reduced the energy consumption of sugar refining by up to 80%, says James Birkett of West Neck Strategies, a desalination consultancy based in Nobleboro, Maine. But it took about 50 years for the idea to make its way from one industry to another. Only in the late 19th century did multi-effect evaporators for desalination begin to appear on steamships and in arid countries such as Yemen and Sudan.

A few multi-effect distillation plants were built in the first half of the 20th century, but a flaw in the system hampered its widespread adoption. Mineral deposits tended to build up on heat-exchange surfaces, and this inhibited the transfer of energy. In the 1950s a new type of thermal-desalination process, called multi-stage flash, reduced this problem. In this, seawater is heated under high pressure and then passed through a series of chambers, each at a lower pressure than the one before, causing some of the water to evaporate or “flash” at each step. Concentrated seawater is left at the bottom of the chambers, and freshwater vapour condenses above. Because evaporation does not happen on the heat-exchange surfaces, fewer minerals are deposited.

Countries in the Middle East with a lot of oil and a little water soon adopted multi-stage flash. Because it needs hot steam, many desalination facilities were put next to power stations, which generate excess heat. For a time, the cogeneration of electricity and water dominated the desalination industry.

Research into new ways to remove salt from water picked up in the 1950s. The American government set up the Office of Saline Water to support the search for desalination technology. And scientists at the University of Florida and the University of California, Los Angeles (UCLA) began to investigate membranes that are permeable to water, but restrict the passage of dissolved salts.

Such membranes are common in nature. When there is a salty solution on one side of a semi-permeable membrane (such as a cell wall), and a less salty solution on the other, water diffuses through the membrane from the less concentrated side to the more concentrated side. This process, which tends to equalise the saltiness of the two solutions, is called osmosis. Researchers wondered whether osmosis could be reversed by applying pressure to the more concentrated solution, causing water molecules to diffuse through the membrane and leave behind even more highly concentrated brine.

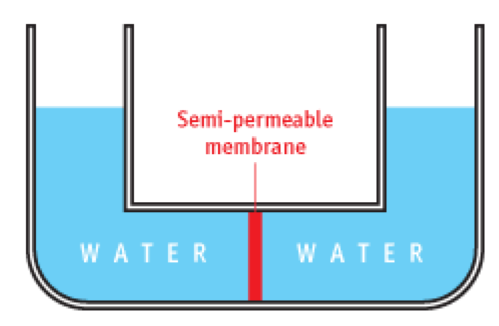
Initial efforts showed only limited success, producing tiny amounts of fresh water. That changed in 1960, when Sidney Loeb and Srinivasa Sourirajan of UCLA hand-cast their own membranes from cellulose acetate, a polymer used in photographic film. Their new membranes boasted a dramatically improved flux (the rate at which water molecules diffuse through a membrane of a given size) leading, in 1965, to a small "reverse osmosis" plant for desalting brackish water in Coalinga, California.

The energy requirements for thermal desalination do not much depend on the saltiness of the source water, but the energy needed for reverse osmosis is directly related to the concentration of dissolved salts. The saltier the water, the higher the pressure it takes (and hence the more energy you need) to push water through a membrane in order to leave behind the salt. Seawater generally contains 3,337 grams of dissolved solids per litre. To turn it into drinking water, nearly 99% of these salts must be removed. Because brackish water contains less salt than seawater, it is less energy-intensive, and thus less expensive, to process. As a result, reverse osmosis first became established as a way to treat brackish water.

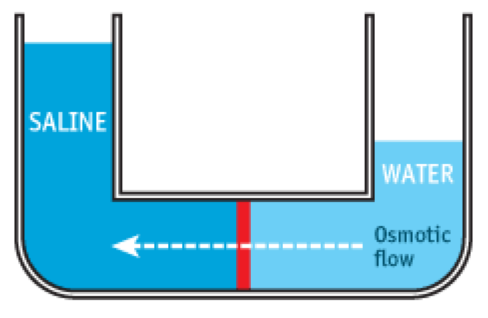
Another important distinction is that reverse osmosis, unlike thermal desalination, calls for extensive pre-treatment of the feed water. Reverse-osmosis plants use filters and chemicals to remove particles that could clog up the membranes, and the membranes must also be washed periodically to reduce scaling and fouling.

Under pressure

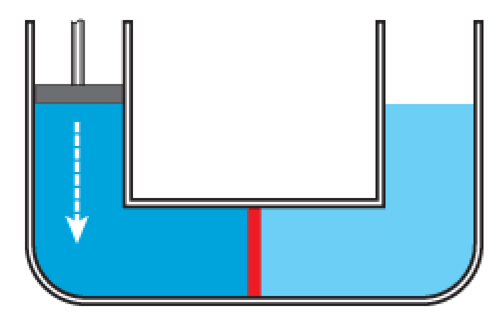
How reverse osmosis works



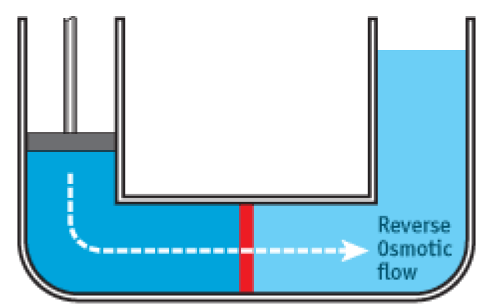
1. Two vessels are separated by a semi-permeable membrane that allows water to diffuse from one side to the other, but restricts the passage of dissolved salts.



2. When the liquid on one side of the membrane is saltier than on the other side, water diffuses through the membrane from the less concentrated to the more concentrated side. This process, which tends to equalise the saltiness of the two solutions, is called osmosis, and the flow is called osmotic flow.



3. The process of osmosis can be stopped by applying pressure to the saltier solution to stop the influx of water molecules. The pressure required (which is equal and opposite to the pressure exerted, in effect, by osmosis) is known as the osmotic pressure.



4. Applying pressure greater than the osmotic pressure does not simply stop the osmosis, but forces it into reverse. The salty liquid becomes even more concentrated, and pure water builds up on the other side of the membrane. This is called reverse osmosis.

Source: *The Economist*

Getting better all the time

In the late 1970s John Cadotte of America's Midwest Research Institute and the FilmTec Corporation created a much-improved membrane by using a special cross-linking reaction between two chemicals atop a porous backing material. His composite membrane consisted of a very thin layer of polyamide, to perform the separation, and a sturdy support beneath it. Thanks to the membrane's improved water flux, and its ability to tolerate pH and temperature variations, it went on to dominate the industry. At around the same time, the first reverse-osmosis plants for seawater began to appear. These early plants needed a lot of energy. The first big municipal seawater plant, which began operating in Jeddah, Saudi Arabia, in 1980, required more than 8 kilowatt hours (kWh) to produce one cubic metre of drinking water.

The energy consumption of such plants has since fallen dramatically, thanks in large part to energy-recovery devices. High-pressure pumps force seawater against a membrane, which is typically arranged in a spiral inside a tube, to increase the surface area exposed to the incoming water and optimise the flux through the membrane. About half of the water emerges as freshwater on the other side. The remaining liquid, which contains the leftover salts, shoots out of the system at high pressure. If that high-pressure waste stream is run through a turbine or rotor, energy can be recovered and used to pressurise the incoming seawater.

The energy-recovery devices in the 1980s were only about 75% efficient, but newer ones can recover about 96% of the energy from the waste stream. As a result, the energy use for reverse-osmosis seawater desalination has fallen. The Perth plant, which uses technology from Energy Recovery, a firm based in California, consumes only 3.7kWh to produce one cubic metre of drinking water, according to Gary Crisp, who helped to oversee the plant's design for the Water Corporation, a local utility. Thermal plants suck up nearly as much electricity, but also need large amounts of steam. "A thermal plant only is practical if you can build it in such a way that it can take advantage of very low-cost or waste heat," says Tom Pankratz, a water consultant based in Texas, who is also a board member of the International Desalination Association.

Economies of scale, better membranes and improved energy-recovery have helped to bring down the cost of reverse-osmosis seawater-desalination. Although the cost of desalination plants and their water depends on where they are, as well as the local costs of capital and operations, prices decreased from roughly $1.50 a cubic metre in the early 1990s to around 50 cents in 2003, says Mr Pankratz. As a result, reverse osmosis is preferred for most modern seawater-desalination (though rising energy and commodity prices mean the cost per cubic metre has now risen to around 75 cents). Experts reckon that further gains in energy efficiency, and hence cost reductions, will be increasingly difficult, however. According to a recent report on desalination from America's National Research Council, energy use is unlikely to be reduced by much more than 15% below today's levels—though that would still be worthwhile, it concludes.

To achieve these reductions, researchers want to find better membranes that allow water to pass through more easily and are less likely to get clogged up. Eric Hoek and his colleagues from UCLA, for example, have developed a membrane embedded with tiny particles containing narrow flow channels, producing a significant increase in water flux. The membrane's smooth surface is also expected to make it harder for bacteria to latch onto. Depending on a plant's design, the new membranes could reduce total energy consumption by as much as 20%, reckons Dr Hoek. The technology is being commercialised by NanoH2O, a company on UCLA's campus.

Sometimes, using desalination within water management may be the only way to ensure supply.

Meanwhile, the possibility of making membranes out of carbon nanotubes, which consist of sheets of carbon atoms rolled up into tubes, has also garnered attention. A study published in the journal *Science* in 2006 demonstrated unexpectedly high water-flow rates. But insiders think it will be a decade before the idea is ready for commercialisation.

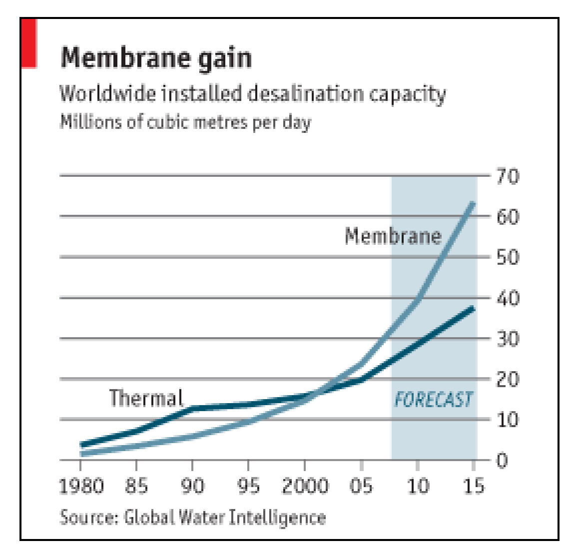
As desalination becomes more widespread, its environmental impacts, including the design of intake and discharge structures, are coming under increased scrutiny. Some of the damage can be mitigated fairly easily. Reducing the intake velocity enables most fish species and other mobile marine life to swim away from the intake system, though small animals, such as plankton or fish larvae, may still get caught in the intake screens or sucked into the plant.

Measuring the impact

A bigger problem may be the leftover brine, which typically contains twice as much salt as seawater and is discharged back into the ocean. So far little scientific information exists about its long-term effects. In the past, most big seawater-desalination plants were built in places that did not conduct adequate environmental assessments, says Peter Gleick, president of the Pacific Institute, a think-tank based in California that published a report on desalination in 2006. But as plants are built in areas with tighter environmental restrictions, more information is becoming available.

Some recent measurements from Perth are encouraging. Initially scientists from the Centre for Water Research feared that the brine discharge from the plant would increase the saltiness of the coastal environment. But a monitoring study found that salinity returns to normal levels within about 500 metres of the plants' discharge units. "The brine discharge is a problem that can be overcome with good design," says Dr Antenucci.

A separate problem may be that some metals or chemicals leach into the brine. Thermal-desalination plants are prone to corrosion, and may shed traces of heavy metals, such as copper, into the waste stream. Reverse-osmosis plants, for their part, use chemicals during the pre-treatment and cleaning of the membranes, some of which may end up in the brine. Modern plants, however, remove most of the chemicals from the water before it is discharged. And new approaches to pre-treatment may reduce or eliminate the need for some chemicals.



Based on the limited evidence available to date, it appears that desalination may actually be less environmentally harmful than some other water-supply options, such as diverting large amounts of fresh water from rivers, for example, which can lead to severe reductions in local fish populations. But uncertainties over the environmental impacts of desalination make it hard to draw definite conclusions, the National Research Council concluded. Its report suggested that further research on the environmental impacts of desalination, and how to mitigate them, should be a high priority.

The reverse-osmosis process is increasingly being used not just for desalination, but to recycle wastewater, too. In Orange County, California, reclaimed water is being used to replenish groundwater, and in Singapore, it is pumped into local reservoirs, which are used as a source for drinking water. In both cases, the treated water is also available for tasting at local water-recycling facilities. This "toilet-to-tap" approach may leave some people feeling queasy, but wastewater is a valuable resource, says Sabine Lattemann, a researcher at the University of Oldenburg, Germany, who studies the environmental impacts of desalination. "Energy demand is lower compared to desalination," she explains, "and you can produce high-quality drinking water."

As water becomes more scarce, people will want to find several ways to secure their supplies. Many parts of the world also have enormous scope to use water more efficiently, argues Dr Gleick—and that would be cheaper than desalination. But sometimes, making desalination part of the approach to water management may be the only way to ensure a steady supply of drinking water.

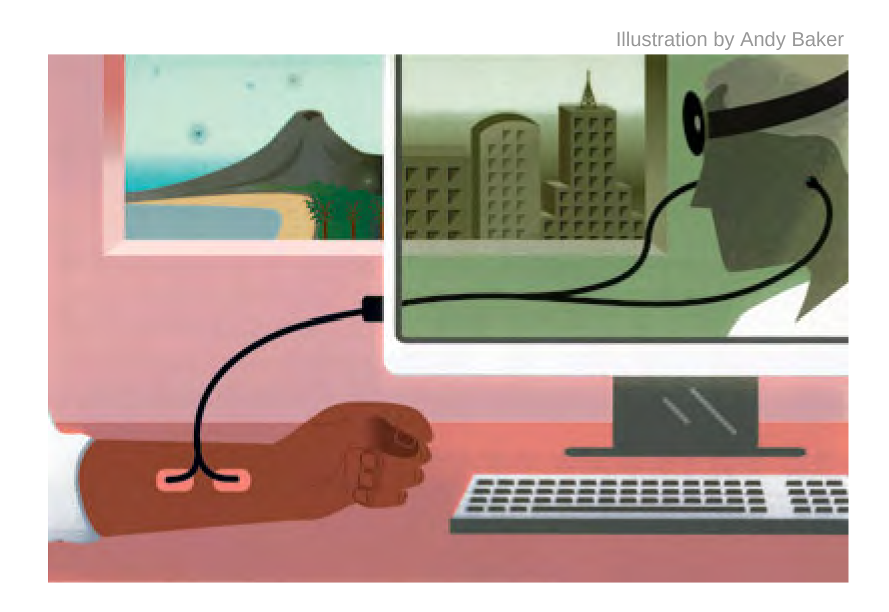
In drought-ridden Western Australia, which ordered conservation years ago, the Water Corporation has adopted what it calls "security through diversity", otherwise known in the industry as the "portfolio" approach. At the moment, Perth's residents receive about 17% of their drinking water from seawater desalination. Desalination makes sense as one of several water sources along with conservation, agrees Dr Antenucci. But, he adds, "to say it is the silver bullet is wrong."

Telemedicine

Telemedicine comes home

Jun 5th 2008
From The Economist print edition

Illustration by Andy Baker



Medicine: Telemedicine permits remote consultations by video link and even remote surgery, but its future may lie closer to home

FEW places on earth are as isolated as Tristan da Cunha. This small huddle of volcanic islands, with a population of just 269, sits in the middle of the South Atlantic, 1,750 miles from South Africa and 2,088 miles from South America, making it the most remote settlement in the world. So it is a bad place to fall ill with an unusual disease, or suffer a serious injury. Because the islands do not have an airstrip, there is no way to evacuate a patient for emergency medical treatment, says Carel Van der Merwe, the settlement's only doctor. "The only physical contact with the outside world is a six to seven day ocean voyage," he says. "So whatever needs to be done, needs to be done here."

Nevertheless, the islanders have access to some of the most advanced medical facilities in the world, thanks to Project Tristan, an elaborate experiment in telemedicine. This field, which combines telecommunications and medicine, is changing as technology improves. To start with, it sought to help doctors and medical staff exchange information, for example by sending X-rays in electronic form to a specialist. That sort of thing is becoming increasingly common. "What we are starting to see now is a patient-doctor model," says Richard Bakalar, chief medical officer at IBM, a computer giant that is one of the companies in Project Tristan.

A satellite-internet connection to a 24-hour emergency medical centre in America enables Dr Van der Merwe to send digitised X-rays, electrocardiograms (ECGs) and lung-function tests to experts. He can consult specialists over a video link when he needs to. The system even enables cardiologists to test and reprogram pacemakers or implanted defibrillators from the other side of the globe. In short, when a patient in Tristan da Cunha enters Dr Van der Merwe's surgery, he may as well be stepping into the University of Pittsburgh medical centre. It is a great comfort to local residents, says Dr Van der Merwe, knowing that specialist consultations are available.

Most of the technology this requires is readily available, and it was surprisingly simple to set up, says Paul Grundy, a health-care expert at IBM. The biggest difficulty, he says, was to install the satellite-internet link. In theory, this sort of long-distance telemedicine could go much further. In 2001 a surgeon in New York performed a gall-bladder removal on a patient in Paris using a robotic-surgery system called Da Vinci. Although that was technologically impressive, it may not be where the field is heading.

Home is where the technology is

For advances in telemedicine are less to do with the tele- than with the medicine. In the long term, it may be less about providing long-distance care to people who are unwell, and more about monitoring people using wearable or implanted sensors in an effort to spot diseases at an early stage. The emphasis will shift from acute to chronic conditions, and from treatment to prevention. Today's stress on making medical treatment available to people in remote settings is just one way telemedicine can be used—and it is merely the tip of a very large iceberg that is floating closer and closer to home.

That is because telemedicine holds great promise within mainstream health care. Countless trials are under way to assess technology that can monitor people who have been diagnosed with heart conditions, or diseases like diabetes, from the comfort of their own homes. Rather than having their devices periodically checked at a clinic, some pacemaker patients can now have their implants inspected via mobile phone. That way, they need only visit the clinic when it is absolutely necessary.

Similarly, BodyTel, based in Germany, is one of several firms to have developed sensors based on Bluetooth wireless technology that can measure glucose levels, blood pressure and weight, and upload the data to a secure web server. Patients can then manage and monitor their conditions, even as they give updates to their doctors. Honeywell, an American industrial giant, has devised a system that patients can use at home to measure peak flow from their lungs, ECG, oxygen saturation and blood pressure, in order to monitor conditions ranging from lung disease to congestive heart failure. Doctors continually review the data and can act, by changing the patients' medication, for example, if they spot any problems.

The shift to telehealth reflects the broader shift from diagnosis and treatment to "wellness".

This sort of thing appeals to both patients and health-care providers alike. The patients keep their independence and get to stay at home, and it costs less to treat them. And as populations age in developed countries, the prospect of being able to save money by treating people at home looks increasingly attractive.

It is not just people with diagnosed conditions who are starting to receive this kind of equipment. Since 2006, Britain has spent £80m ($160m) on "preventative technology grants" which provide special equipment to enable 160,000 elderly people to stay in their homes.

Most of today's technology, however, calls on the patients to remember to monitor themselves, and also requires them to operate the equipment. For some patients, such as those in the early stages of Alzheimer's disease, that is impractical. So a lot of work is being done to automate the monitoring process and make the equipment easier to use.

William Kaiser and his colleagues at the University of California, Los Angeles, have developed a "smart cane" to help monitor and advise people convalescing at home, for example. "It has force sensors that measure pressure at the tip of the cane and around the handle. It also has motion sensors and accelerometers," says Dr Kaiser. It uses these to calculate the gait of the patient and work out how they are doing with the cane, giving them feedback about how they could make better use of it to recover from, for example, a hip replacement. "It provides guidance, either as beeps or it can talk to you," he says.

Another approach is to use sensors embedded in the home. Oliver Goh of Implenia, a Swiss building-management firm, has come up with a system to monitor the well-being of the occupant of a house. Using sensors on doors and mattresses, smart pill boxes that can tell when they are being opened, heart-monitors and a location-sensing wristwatch—the system allows carers to keep tabs on elderly people. Implenia now has six elderly volunteers lined up to test the technology, says Mr Goh. He hopes that if they have a heart attack, cannot get out of bed or need help, their carers will soon know. Ultimately, he says, the aim is to see if this sort of approach can help to extend life expectancy.

Prevention is better than cure

Looking even further ahead, some day it may make sense to give these technologies to healthy people, the "walking well". If sensors can monitor people without a threat to their privacy or comfort, doctors may able to spot diseases before the patient notices any symptoms. "It's moving from telemedicine to telehealth and teleprevention," says Dr Grundy of IBM. It could also improve the efficiency of health-care

systems, he says.

Illustration by Andy Baker

This kind of approach could save money as well as spotting illnesses early, says Dr Kaiser. “We'll detect them earlier when the cost of treatment and impact on an individual will be less,” he says. The technology for this does not yet exist, admits John Linkous, executive director of the American Telemedicine Association. “There still isn't a device that can give you a complete body check,” he says. “But I'm very optimistic about it in the long run.”

One idea is to use wireless infra-red skin sensors to measure blood-count, heart-rhythm and the level of oxygen in the blood. Another is to implant wireless sensors powered by the wearer's own body heat. Yet another common idea is to use smart toilets that can monitor human waste for the telltale signs of intestinal disease or cancer. The hard part is not so much developing the sensor technology, says Dr Linkous, as sifting through the results. “It would produce a tsunami of data, and the problem is that we aren't set up with health-care systems that can deal with all that,” he says.

The answer will be even more technology, says Dr Bakalar. “There has to be a way of filtering this information so that it doesn't overwhelm the medical services,” he says. The obvious approach is to use “expert systems”—software programmed with expert medical knowledge and that can make clinical judgments.

Like telemedicine, expert systems have been around for some time. Trials in Denmark, to advise doctors how to prescribe, suggest the technology has great scope. Sometimes they can reach better clinical judgments than human experts do. But they are not widely used, partly because doctors are unwilling to be bossed around by a computer in the corner, but also because they have been difficult to integrate into medical practice. They could be ideally suited to telehealth, however, quietly sifting through the data generated by sensors and only raising the alarm and calling in their human colleagues when it becomes necessary to do so.

The shift from telemedicine to telehealth reflects a broader shift from diagnosis and treatment to “wellness”. Taken to its technological conclusion, this would involve using wireless sensors and implants to screen entire populations for early signs of disease as they go about their daily lives. If it can be made to work, the days of making an appointment to see your doctor when you are not feeling well could be over. Instead, it may be your doctor who calls you.

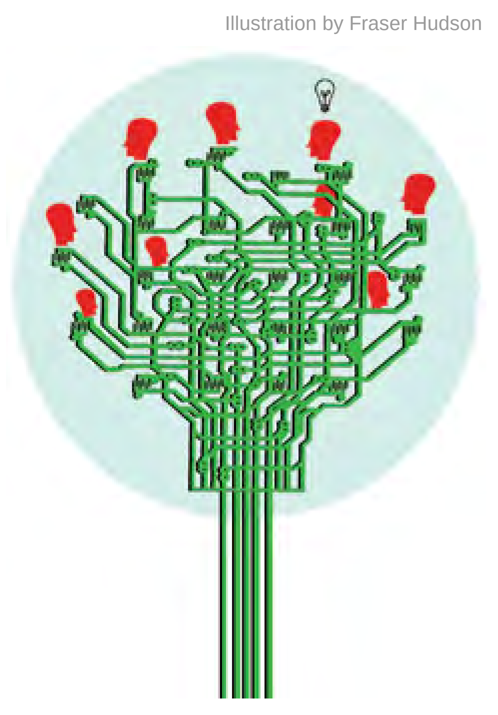
Open-source hardware

Open sesame

Jun 5th 2008
From The Economist print edition

Consumer devices: Revealing the underlying technical details of electronic gadgets can have many benefits, for both users and manufacturers

Illustration by Fraser Hudson



THE idea of "open source" software is familiar to many computer users. Enthusiasts get together on the internet to create a new program, and as well as giving it away, they also make available its source code—the software's underlying blueprint. This allows other people to make additions and improvements, and those are made available, in turn, to anyone who is interested. You do not have to be a programmer to benefit from the open-source model: many people use the Linux operating system or Firefox web-browser, for example, both of which have been developed in this way.

Now the same approach is being applied to hardware, albeit in a modified form. The open-source model cannot be directly carried over to hardware, because software can be duplicated and distributed at almost no cost, whereas physical objects cannot. Modifying source code and then distributing a new, improved version of a program is much easier than improving and sharing the design of, say, an open-source motorbike. Some day, perhaps, fabricating machines will be able to transform digital specifications (software) into physical objects (hardware), which will no doubt lead to a vibrant trade in specifications, some of which will be paid for, and some of which will be open-source.

But until that day, the term "open-source hardware" is being used in a narrower sense. It refers to an emerging class of electronic devices, for which the specifications have been made public, so that enthusiasts can suggest refinements, write and share software improvements, and even build their own devices from scratch. This is not as daft as it sounds. Even if all the details needed to build something are available, few people will have the tools or the inclination to do so.

A good example is the OSD, a "media fridge" made by Neuros Technology of Chicago which acts as a repository of video from DVDs, camcorders, cable boxes and so on. Neuros made the OSD's technical specifications available, and a group of users then wrote software to add a new feature that many users had requested: the ability to stream video from the OSD to another device across the internet. To access this new feature, users simply had to download a software patch. "It's harder for my device to get antiquated," says Aaron Crum, an OSD user, "and I don't have to buy another $200 device next year."

This opens the way to a new model for product development, suggests Seth Talley, the owner of a Chumby, another open-source device. "The destiny of the product has been turned over to the user base," he says. "You're talking the wisdom of crowds with the control of the corporation." Companies, for their part, say an open approach can help them get to market quickly with products that give customers what they want—without the need for market research. Such advantages, they say, outweigh the drawbacks of exposing what are usually seen as corporate secrets.

The origins of open

In some ways, open-source hardware is a throwback to the 1970s and 1980s, when early computers were sold in kits or shipped with schematic diagrams to make it easier for users to customise them. But the open-hardware trend has been reborn in recent years, thanks to the rise of the internet and the success of open-source software. Some enthusiasts point to 2005 as a crucial year: that was when work

began on devices such as the RepRap (a rapid-prototyping machine that will, its makers hope, be able to replicate itself) and the TuxPhone, an open, Linux-powered mobile-phone. It was also when Sun Microsystems, a computer-maker, decided to publish the specifications of one of its microprocessors, the UltraSPARC T1. The open-source hardware trend is now growing fast, says Adrian Bowyer, a mechanical engineer at the University of Bath and the inventor of the RepRap.

Now companies, and not just internet-based enthusiasts, are embracing the open-source hardware model. Neuros is one example; another is OpenMoko, based in Taipei, which has an open-source mobile-phone operating system and a mobile phone, the Neo1973. Chumby Industries, based in San Diego, has the Chumby—a sort of computerised cushion with wireless internet access and a small touch-screen, which can be reprogrammed as an alarm clock, weather station, photo album and so on.

There can be limits to open-hardware companies' openness. Gumstix, which sells tiny computers to put into other devices, publishes the hardware specifications of all its products except for its motherboards. "The motherboard is our intellectual property—we have a secret sauce to make that," says Gordon Kruberg, the firm's chief executive. "My philosophy is: I really like to publish as much as I can, but my gut feeling is that this is what we want to keep this in-house." Some firms publish just enough information about their hardware for it to be reprogrammed, but not replicated. This is the approach of iRobot, the maker of the Roomba robotic vacuum-cleaner, based in Bedford, Massachusetts, for example.

Enthusiasts enjoy tinkering, and other users like being able to upgrade their devices with new software. But what is in it for companies? One advantage is being able to draw upon the expertise of their users. "We get a question that has stumped our developers for days and we push it public and get a suggestion within five minutes," says Sean Moss-Pultz, OpenMoko's founder and chief executive.

Even so, making a business out of open hardware is a notion that baffles many people. "They wonder how you're going to make money with it," says Mitch Altman, president and chief technology officer at Cornfield Electronics in San Francisco. It makes the TV-B-Gone, an impish gadget for turning off televisions (whether or not they belong to you), and also sells kits for consumers who want to build their own.

Open-hardware business models are difficult to understand, because by turning users into product developers, they turn tradition on its head, says Eric von Hippel, professor of innovation at the MIT Sloan School of Management in Cambridge, Massachusetts, and the author of "Democratizing Innovation". That makes it necessary for companies to consider the users' motivations too, he says. "The users have a built-in business model—they build to satisfy themselves," he says. "The business model is 'I can get stuff for myself, I can get a better design and I can benefit.' The innovation is paid for within the activity itself."

Illustration by Fraser Hudson

As well as tapping a valuable new source of ideas, an open approach can also lead to savings in market research, as users act as focus groups, indicating what new features they would like (and then helping to develop them). An early model of OpenMoko's phone had no Wi-Fi, for example, because Wi-Fi chips were expensive and the firm could not find a chipmaker willing to go along with its open approach. But once OpenMoko posted its plans and schematics online, enthusiasts told the company that they really wanted the Wi-Fi function—and then found a chipmaker willing to supply a chip and to go along with OpenMoko's unusual model.

Going open-source may also help to keep customers. "Once you've opened the guts of a machine, you're a much more loyal customer," says Mr Talley, who got a Chumby for Christmas. Sun says the primary advantage of open-sourcing the designs of its processor chips is an elusive marketing boost to its other products, such as server computers. "It builds a community that will buy our hardware," says Sridhar Vajapey, who runs Sun's OpenSPARC program. "Is Sun making money on open-source hardware? Absolutely. We can't measure it directly, but we do know the vector is going in the right direction."

An alternative approach is to make money from something other than the hardware. Chumby Industries, for instance, expects to make most of its revenue by piping advertising to its devices. "It's a traditional

media model, only with user control," says Steve Tomlin, the firm's founder and chief executive.

Difficult to open

But open-source hardware poses difficulties, too. In addition to publishing all the software code for a device, for example, makers of open-source hardware generally reveal the physical information needed to build a device, including schematics, materials and dimensions. This is not something manufacturers normally do, and takes time and effort. Supplying open-source hardware is necessarily, therefore, more time-consuming and complex. "It can't be as simple as open-source software," says Peter Semmelhack, the founder of Bug Labs, a company based in New York that sells open-source hardware modules to put into other devices. "It has chips, schematics and things coming from many sources." And suppliers of those many parts are not always interested in going open source, which further complicates matters. OpenMoko tries to use chips with open specifications, says Mr Moss-Pultz, though some chipmakers are reluctant to play along. "It's like they're taking their pants off in public," he says.

Working with a zealous open-source community can be like negotiating with a stampede. "Too much feedback makes it so you can't work any more," says Mr Moss-Pultz. A company can easily lose focus when it is deluged with unprofitable and obscure ideas from fervent users. "In open-source hardware there is a great deal of flexibility," says Joe Born, the chief executive of Neuros. "But at the same time, that can be more rope to hang yourself with." Another worry is that by sharing plans for future products online, along with schematics and software, firms may jeopardise sales of existing products, says Mr Kruberg.

And even if open-source enthusiasts like your product, are they representative of the wider public? Open devices "tend to be geared more toward technology-oriented people, with products you might not see at Best Buy," notes Lance Lavery, a systems administrator and self-proclaimed "uber-geek" who owns a Chumby. As James Staten, an analyst at Forrester Research puts it: "Consumers don't tinker." So open-source hardware could turn out to be an obscure niche.

But Dr von Hippel disagrees. Even those who do not tinker can benefit from the work of those who do, just as ordinary consumers can still use Firefox without having to know anything about programming. Mainstream consumers will benefit from open hardware, he says, "by having a wider choice." The analogy with software is informative in another way, too. Open-source software has resulted in new products such as Linux and Firefox, but it has also been embraced by many big names in the computer industry, such as IBM, Sun and Hewlett-Packard. Even Microsoft, the company that has been most vociferous in its opposition to the open-source model, has lately conceded that in some situations, at least, it has merit.

All of which suggests that open-source hardware will really start to make a difference when big hardware makers and consumer-electronics firms begin to embrace the idea. "It's a new day for consumer electronics," says Chumby's Mr Tomlin. "The community makes suggestions and shares hacks. And we don't try to sue our innovators. We make heroes of them."

Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Brain scan

The free-knowledge fundamentalist

Jun 5th 2008
From The Economist print edition

Jimmy Wales changed the world with Wikipedia, the hugely popular online encyclopedia that anyone can edit. What will he do next?

Illustration by Andy Potts



"WHY is this working?", Jimmy Wales recalls pondering during the mid 1990s. He had been doing online research for his PhD thesis in financial mathematics and came across a "free software" manifesto written by Richard Stallman, a bearded hacker and an evangelist for what is now known (to his own chagrin) as "open-source" software. Nobody was in charge of it. Strangers were collaborating without even asking for money. Instead of copyright, there was "copyleft". It was all a puzzle. Mr Wales was intellectually hooked.

He never completed his PhD thesis. But his fascination with the idea of "free" information eventually led him, through twists and turns, to co-found Wikipedia, the online encyclopedia that anybody can edit and that has arguably become the single best example of "user-generated content", "audience participation", the "hive mind", "collective intelligence" and other "Web 2.0" buzzwords.

Wikipedia belongs to a non-profit foundation and, being an exercise in collaboration among volunteers, it has no boss. But Mr Wales, with his scruffy beard, piercing blue eyes, black mock-turtleneck and velvet coat, has become the public face of Wikipedia by default. He is the closest thing it has to a spokesman, the occasional monarch who intervenes in editing disputes, and the ambassador—both inspiring and controversial—of the Wikipedian idea.

Even as a boy in Alabama, recalls Terry Foote, a close friend for decades, Mr Wales was a "voracious reader" with "intense intellectual curiosity" for absolutely anything except sports. They grew up in Huntsville, where Werner von Braun conceived his Apollo moon shot and where Messrs Foote and Wales hung out with the children of rocket engineers. They would drive down to New Orleans and "get drunk off our butts," then get over the hangover with science and philosophy. "I always knew that he was going to be somebody famous, having to do with technology," says Mr Foote.

The philosophy that appealed to Mr Wales was Objectivism, a strand of thinking associated with the author Ayn Rand. "It colours everything I do and think," he says. In her cult novels "Fountainhead" and "Atlas Shrugged" and other works, Rand described rugged and unbending individualists who embodied a raw brand of capitalism and a metaphysical conviction that reality was fixed and objectively knowable. Through his interest in Objectivism, Mr Wales met, in the early 1990s, a philosopher named Larry Sanger.

Mr Wales was moderating an online discussion about Rand, and Mr Sanger joined in as a sceptic, freely displaying his "contempt for Objectivists because they pretend to be independent-minded and yet they follow in lockstep behind Ayn Rand," as he puts it. Then Mr Sanger started moderating his own philosophy discussion, and Mr Wales joined in. Mr Wales called him up to contest every single point, and when the two met offline to carry on the jousting, they hit it off famously and became friends.

By the late 1990s, Mr Wales was investing in a website called Bomis, a sort of search engine or web directory where "99% of the searches had to do with naked babes," as Mr Foote, who was Bomis's advertising director, puts it. Bomis did barely well enough to support its four employees, he says, but it enabled Mr Wales to fund his bigger fascination: an online encyclopedia. He invited Mr Sanger to be its editor, and in 2000 they started Nupedia. Experts were invited to write articles on various subjects, and the idea was that Nupedia would sell advertising and make profits.

Edit this page

It soon became clear that this was not going to happen, so Messrs Wales and Sanger changed tack. They had often discussed the open-source model in software and how it might be applied elsewhere, and had both read "The Cathedral and the Bazaar", a seminal open-source text. Who first had which part of the winning idea is now the subject of a bitter dispute, but Mr Wales seems to have proposed throwing the project open to contributions from the public, while Mr Sanger suggested using "wiki" software (which allows easy editing of web pages) to do it. The result was Wikipedia, launched in 2001 as a non-profit project. It soon became a global hit and is now one of the most visited sites on the internet. Its 10m-odd articles in 253 languages are often among the top results for Google searches.

This added several intellectual twists to Mr Wales's fundamental Objectivism. On one hand, Wikipedia seems to fit well with Rand's contention, elaborated more fully by libertarian thinkers such as Friedrich von Hayek, that decentralised markets work best because they are so much more efficient than centralised bureaucracies at digesting information. In this case the outcome was not a commodity price, say, but knowledge. On the other hand, Wikipedia continues to be free in the sense of both "free speech" and "free beer", as an old open-source saying has it. Some people react by wondering, "gee, this is a guy who is very pro-capitalist and yet he started a non-profit foundation for sharing knowledge," says Mr Wales.

This is my truth, tell me yours

The more subtle twist has to do with the philosophical concept of truth. Ayn Rand believed that truth exists independently of the minds and opinions of people. This ran directly counter to the postmodernist view that there are many truths, depending on the perspective of the observer. And Wikipedia's process seems, on the face of it, to assume the postmodernist rather than the Objectivist stance. The truths described in its millions of articles evolve over time and through the dialectic of editing wars, leading to a new and fuzzy concept of reality dubbed "wikiality". "Ayn Rand would be turning in her grave," thinks Mr Sanger.

Mr Wales takes a different view. "I think that reality exists and that it's knowable," he says, adding that Wikipedia aims not for truth with a capital T but for consensus. "You go meta," he says, meaning "beyond" the disputes and to the underlying facts. For instance, when deciding how to describe abortion, "I may not agree that it's a sin, but I can certainly agree that the pope thinks it's a sin." Despite their disagreements, people on both sides of a debate can in many cases reach a consensus on the nature of their dispute, at least. Through this process, says Mr Wales, Wikipedia articles eventually reach a fairly steady state called the "neutral point of view", or NPOV.

As Mr Wales struggles with Wikipedia's intellectual controversies, he now does so as a minor celebrity.

"Wikipedia resolves the postmodern dilemma of truth by ultimately relying on process," says Gene Koo of Harvard Law School's Berkman Centre for Internet and Society. "Its process is both open and transparent. The levers of power are not destroyed—Foucault taught us that this is impossible—but simply visible." To which Mr Wales responds, more simply, that NPOV is a way of saying: "Thanks, but, um, please let's get back to work."

That is easier said than done. Wikipedians are quite willing to get back to work, and on some truly bizarre subjects. This has led to a running controversy between "deletionists" who would prefer to cover only noteworthy subjects on Wikipedia, as a more traditional encyclopedia would, and "inclusionists", who want to accept anything, no matter how banal. A deletionist wonders what message it sends when there is more "knowledge" available about Pokémon characters than about quantum mechanics; an inclusionist responds that the Pokémon articles do not preclude the addition of more articles about quantum physics.

Mr Wales describes himself as a moderate in this debate. "Wiki is not paper," as the saying goes, so more

can be included than in past encyclopedias. That said, he is “somewhat deletionist” when it comes to biographies. With Wikipedia’s sudden power comes a responsibility to “preserve human dignity”, since nothing is ever forgotten online. Does Corey Delaney, an Australian teenager who made headlines after throwing a wild party in Melbourne while his parents were away, really deserve a Wikipedia page? (As of this writing, he no longer has one.)

As Mr Wales struggles with such intellectual controversies, he now does so as a minor celebrity. Neither Bomis nor Wikipedia has made him rich--if he is comfortable, it is mainly the result of earning money from speaking engagements, say friends. But as the face of Wikipedia and of free knowledge he hobnobs with the likes of Al Gore and Tony Blair. He may live in a modest home in suburban Florida, but he has also been a guest on Necker Island, the private Caribbean hideaway of Richard Branson, a British tycoon. When Mr Wales had an affair with a Canadian television presenter, bloggers treated it with the same voyeuristic zeal usually reserved for the likes of Brad Pitt.

Not rich, but famous

All this has gone to his head, say former friends. Mr Wales “has created something of a mythology about himself,” says one. “The image he created is that he is this benevolent millionaire who donates his time for this charitable project; that is not true.” Instead, this acquaintance argues, Mr Wales is merely basking in the glow of Wikipedia’s success. He has alienated his former inner circle, and he “keeps his Objectivism under wraps” when hanging out with famous people.

An alternative view is that Mr Wales is still as intellectually curious as ever and is looking for a next big thing. He is in his forties now, an age that Carl Jung believed to be the “noon of life”, when men, in particular, reappraise past achievements and look for new ways to make a contribution. Mr Wales wants his to be Wikia, a for-profit company that is separate from Wikipedia. He calls it the “uncyclopedia” because he hopes to use wiki technology to build “the rest of the library”—books, articles about health and hobbies—with no presumption of neutrality.

Mr Wales is especially passionate about Wikia’s web-search project. Its search bar looks like Google’s but has a twist. Whereas Google keeps its algorithms a secret, Wikia has made its own open-source. Mr Wales has no illusions about taking on the search juggernaut that is Google and says that “we would be overjoyed to get 5% of the search market,” which would still be worth a fortune in advertising revenues (Google, meanwhile, is moving onto Wikipedia’s turf with a new project called Knol.)

So far Wikia’s search results are embarrassingly poor, as reviewers have noted. And there are more fundamental doubts. Wikipedia succeeded because, in 2001, there was no free online encyclopedia. Today web search, by contrast, is a hyper-competitive industry. Consumers are not clamouring for a new search engine. And revealing the algorithms could make it easier for website designers to manipulate the results. Mr Wales does not see it that way. Search has become a window to knowledge, and Google and its rivals have become its arbiters. “For me it’s a political statement,” he says. “We don’t need secrecy.” Ayn Rand would surely approve.

Offer to readers

Jun 5th 2008
From The Economist print edition

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Cars in Russia

Crisis? What oil crisis?

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From The Economist print edition

EPA



High oil prices may be causing pain for carmakers in America, but they have helped create a booming market in Russia

THIS week the death-knell sounded for America's love affair with pick-up trucks and sport-utility vehicles (SUVs). General Motors (GM) announced a 30% fall in car sales in May, compared with a year earlier, as high fuel prices prompted Americans to shun its gas-guzzlers for smaller, more frugal vehicles. Ford posted a 19% drop, and sales of its F-150 pick-up fell behind Toyota's Camry and Corolla for the first time. Most telling was the 62% fall in sales of Hummers, GM's hulking military-style SUVs. GM announced plans to close four truck factories and a “strategic review” of the Hummer brand. Total car sales fell for the third month in a row.

But there is one country where the high oil price is powering the expansion of the market, rather than painful restructuring. Thanks to abundant natural resources, Russia's economy has grown by an average of 7% a year for the past decade. Real disposable income has nearly doubled in the past five years and is growing by more than 10% a year. That means a lot of Russians can suddenly afford to buy cars.

Car ownership, at about 200 per 1,000 people, is still very low by developed-world standards. (In most of western Europe it is over 500, and in America it is around 800.) And although average incomes are lower than in the West, so is consumer debt. Heidi McCormack, GM's head of business development in Russia, says that compared with other markets, burdened by debt and oil prices, “Russia is still magically isolated.”

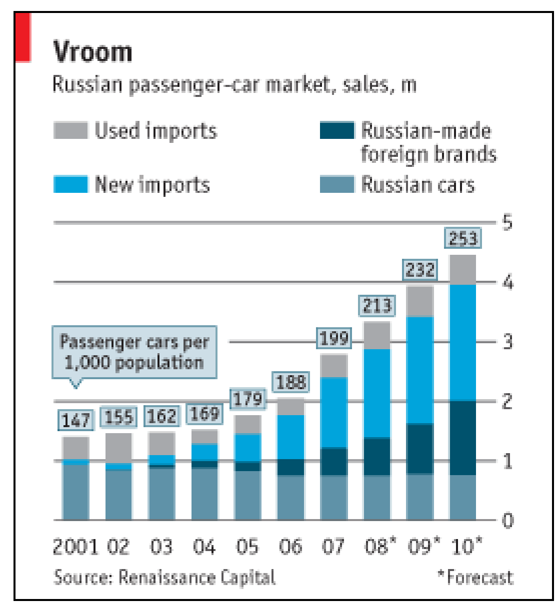
The growth and size of the Russian market has confounded every forecast. In 2007 sales of new cars grew 36% by volume and, reflecting the steadily increasing buying power of customers, 57% by value. Sales of passenger vehicles exceeded 2.7m. Eduard Faritov, an analyst at Renaissance Capital, an investment bank, thinks Russia could outstrip Germany as Europe's biggest market this year, with sales reaching around 3.3m. By 2012 Russians will be buying more than 5m new cars a year, of which nearly 90% will be foreign brands, predicts Ernst & Young, a consultancy.

Sales of Russian brands have stayed flat for the past few years—hovering between 750,000 and 800,000. All the growth has been met by the foreigners, observes Nigel Brackenbury, head of Russian operations at Ford, the first foreign carmaker to set up its own factories in the country. With its big dealer network, it has done well: a decade ago Ford sold fewer cars in Russia in a year than it now sells in a week.

Foreign cars are sold through glitzy showrooms such as those at Major City, a “dealer village” on

Moscow's outskirts. While waiting for their new cars, customers can pop into the on-site cinemas, check e-mail on a bank of computers, munch freshly made snacks or get their hair done. Russian brands have been left in the dust. As one of the dealership's managers puts it: “Selling Russian cars is different. You just need someone to count the money.”

Domestic producers have found it hard to compete, first with imported second-hand cars and more recently with new imports and foreign brands made in Russia. In 2002 nearly 500,000 cars sold were used imports—mostly brought in from Germany and Japan. That represented 44% of the market by value. Even quite elderly Volkswagens and Toyotas offered far superior quality to the locally produced Ladas, made by AvtoVAZ, or the Volgas, made by GAZ. In an attempt to help the domestic carmakers, in late 2002 the government slapped a 25% duty on imported used cars.



But the local firms failed to take advantage of the breathing space. As the sale of used imports fell, new imports took their place, amounting to 48% of the market by value in 2005. The government's response was not to raise import duties again, but to pass a measure intended to persuade foreign makers to revive the Russian car industry by setting up local assembly plants.

The terms were simple: to qualify for relief from import duty, foreign carmakers had to build a factory with a capacity of more than 25,000 vehicles a year—a minimum investment of at least $100m. Within five years of production starting, the local content in each car had to reach 30%. Unlike in China, firms did not have to establish partnerships with local producers.

This triggered a scramble by ten of the world's biggest car firms to build factories in Russia. Investment plans already announced suggest that new capacity could reach 1.6m units by 2012. Renault is building Logans near Moscow at a revived Moskvitch facility, and Volkswagen is constructing a factory in Kaluga, 110 miles south-west of Moscow. But most firms are setting up around St Petersburg, following the lead of Toyota and Ford, which has just announced an increase in capacity to 125,000 cars a year. They will soon be joined by General Motors, Nissan, Suzuki and Hyundai. St Petersburg's popularity is down to its ice-free port, rail links and well-educated workforce—and the can-do approach of the governor, Valentina Matviyenko, Russia's leading female politician.

Where does all this leave the domestic carmakers? In 1990 they built 1.2m passenger vehicles, but last year they sold just 756,000. AvtoVAZ, which makes more than 90% of the Russian-brand passenger cars, is the most exposed. Its Ladas still sell in provincial Russia because there are lots of dealers, the cars are cheap and there are few alternatives.

The main threat to Lada comes from very cheap Chinese cars. So far the authorities have refused the likes of Chery and Great Wall permission to set up in Russia, but such discrimination may not be sustainable. A further threat is that the dynamics of the used-car business are about to change again. If, as expected, the 18% VAT on used cars sold by dealers is abolished, Lada's price advantage will vanish.

AvtoVAZ's main hope lies in the 25% stake recently acquired by Renault for $1 billion. Renault's managers started arriving in March, and its boss, Carlos Ghosn, will be one of three Renault executives on the AvtoVAZ board. With its experience in turning round Nissan and making automotive alliances work, Renault is the ideal partner for AvtoVAZ. Yann Vincent, the newly installed operations chief, says the priority is to bring new Ladas to market, based on Renault platforms, by 2010.

Another local producer, Severstal-Auto, has sensibly decided that rather than taking on foreign car brands, it will instead specialise in small vans and trucks, demand for which will be driven by the fast-growing retail sector. Severstal already has a joint venture with Fiat to produce its Albea and Linea saloons, and in May Vladimir Putin, the prime minister, drove the first Fiat Ducato van off the firm's new production line in Elabuga, a “free economic zone” in Tatarstan. Severstal also makes small and medium-sized Isuzu trucks.

Nikolay Sobolev, Severstal's finance chief, adds that a further twist to the strategy is for Severstal to build a dealer network to sell high-margin services, such as adapting its vehicles for school and hospitals,

providing full-service leasing arrangements and offering credit terms with local banks. Domestic firms that understand their customers and identify profitable niches can still prosper. But when it comes to car-buying, normally chauvinistic Russians seem only too happy to leave their patriotism at the showroom door.

Business in Russia

Crude tactics

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The curious goings-on at TNK-BP are even stranger than they appear

WHEN your Moscow office is raided by Russia's security services, a court in Siberia imposes an injunction on your staff and your work permits are denied, you can tell you have upset someone. But who, and how? That is what BP, a British oil firm which owns 50% of TNK-BP, a joint venture with a Russian firm, has been trying to find out.

The firm has been under pressure from the Russian authorities before. The threat of losing its licence for the giant Kovykta field in East Siberia persuaded it to sell 63% to Gazprom, the state gas monopoly. Given the dire state of Russian-British relations and the state's distaste for foreign ownership of its oil reserves, it seemed natural to suspect the Kremlin when BP ran into visa problems in March. The arrest of a TNK-BP employee on espionage charges heightened such suspicions.

But this neat picture has just been dispelled by Robert Dudley, the boss of TNK-BP, who blames BP's recent troubles on its Russian partners. They are Mikhail Fridman, the head of Alfa Group, and his partners Viktor Vekselberg and Leonard Blavatnik, who are collectively known as the AlfaAccessRenova consortium. In an interview with *Vedomosti*, a Russian business daily, Mr Dudley said there were disagreements between TNK-BP's shareholders, and that managers had deliberately filed incorrect visa applications for 150 of TNK-BP's foreign staff.

Separately, an obscure Moscow brokerage, called Tetlis, filed a lawsuit in Siberia claiming that TNK-BP's payments to BP contractors amounted to extra dividends, and secured an injunction barring BP staff from TNK-BP. According to Tetlis's website, two of its three top managers used to work for Mr Fridman's Alfa Group.

The Russian shareholders want Mr Dudley out, and walked out of talks with Tony Hayward, the head of BP, after he refused to give in. As *The Economist* went to press, Mr Hayward was on his way to Russia for more talks with shareholders and government officials. So what is behind the hostility? People close to BP say the Russian oligarchs are up to their old tricks again, and are trying to exploit Russia's weak institutions and take control.

Russian business practices can be (and often are) shockingly crude. But the Russian shareholders claim to have a genuine grievance. They say BP treats TNK-BP as a subsidiary, rather than an independent company run for the benefit of all shareholders. They say BP cares more about its oil reserves than costs or profits. TNK-BP provides 40% of BP's replacement reserves and 25% of its oil production. The Russians would like TNK-BP to expand abroad, but that would turn it into a rival to BP.

A recent memo from Mr Dudley, seen by *The Economist*, bars managers from discussing deals in countries blacklisted by America's state department, including Cuba, Iran and Syria. “TNK-BP is an independent Russian company and should be subject to Russian laws,” says Mr Fridman. Russian shareholders also object to TNK-BP's payment of hundreds of millions of dollars to BP contractors, citing a conflict of interest. “There is certainly room for cost cutting in TNK-BP,” says Ivan Mazalov, a fund manager at Prosperity Capital Management, a minority shareholder.

In any other country this would have been an ordinary shareholder dispute, but in Russia, politics always get in the way. The picture has been muddied by Gazprom, which has signalled its intention to buy out the Russian shareholders in TNK-BP and form its own partnership with the British firm. BP seems to like the idea and has engaged in negotiations.

Gazprom had also proposed an option for BP to buy back 25% of the Kovykta field in return for some valuable assets outside Russia. People close to BP say the deal is being held up by the Russian shareholders' reluctance to sell their stake in TNK-BP and the recent hostilities are simply a negotiating

ploy. Given Gazprom's political power, they and many others assume that the Russian shareholders will have to sell.

Yet Gazprom, which has huge debts, does not have the free cash to buy them out. (TNK-BP could be worth up to $60 billion.) Mr Fridman, who also has powerful patrons in the Kremlin, says nobody has asked him about the sale of his stake—and even if they did, he would not sell. Navigating Russian politics when nobody knows who really runs the country is a futile task. The two sides would be better off sticking to business.

Economist.com BUSINESS

Microprocessors

Battlechips

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As once-distinct markets start to overlap, chipmakers come to blows

Illustration by David Simonds



FOR YEARS the chip industry had only one story: AMD's David pitted against Intel's Goliath, as the two Silicon Valley firms fought it out in the market for microprocessors that power PCs and servers. But a flurry of announcements this week shows that things are no longer so simple, and chipmakers that once ruled separate markets have started to come into conflict.

Intel has long dominated the market for PC and server chips, but there are two other big classes of processors: those for high-end graphics and for mobile phones. Most graphics chips are made by ATI Technologies (now part of AMD) and Nvidia; most mobile handsets are powered by processors based on technology from ARM Holdings, a British chip-design company.

These markets have been largely separate because different processors need to be good at different things: PC chips must be able to run ever more complex software; graphics chips have to be good at rapidly crunching data in parallel streams; and handset chips must balance performance with power consumption. But the borders between these markets are blurring as the PC matures and portable devices become more elaborate and capable.

To avoid getting stuck in a maturing market, Intel has branched out by developing Atom, a new family of low-power chips for “mobile internet devices” (MIDs, bigger than smartphones), “netbooks” (very small laptops) and “nettops” (cheap, stripped-down desktop PCs). Intel unveiled the first examples at a trade show in Taipei this week, and said that it is already having problems meeting demand. The firm also wants a bigger share of the profitable graphics-chip business. It intends to beef up the graphics abilities of its processors and will one day start selling specialised graphics chips.

AMD is taking similar steps. In 2006 it bought ATI for $5.4 billion in order to put advanced graphics into its microprocessor chips. This week the firm unveiled Puma, a new line of chips for small laptops, which includes technology from ATI for better graphics. Puma is supposed to revive AMD's fortunes after a series of mishaps. If Intel's Atom is a success, AMD is also expected to launch something similar.

With Intel and AMD encroaching on its territory, Nvidia, also based in Silicon Valley, is fighting back. It wants its increasingly sophisticated chips to be used not just to generate the graphics in video games, for instance, but also for other demanding tasks, such as decoding video or manipulating photos. It offers tools to make it easier to develop software for its chips. As for the new market in powerful portable devices, Nvidia intends to tackle it from both ends. It recently teamed up with Via, a Taiwanese chipmaker that specialises in low-power processors for laptops. And this week it announced a line of chips for MIDs called Tegra, which are based on technology from ARM and are supposed to be particularly good for watching videos and playing games.

Companies that use ARM's designs to make chips for mobile phones, such as Texas Instruments (TI), Qualcomm and Samsung, are not sitting still. As Intel and AMD move down into their market, they are trying to move up, by challenging Intel in the market for small laptops and MIDs.

Industry analysts say it is hard to predict how all this will turn out. A big question is whether MIDs, netbooks and nettops will be as successful as many predict, says Dean McCarron of Mercury Research, a market-research firm. And it is uncertain whether low-power PC chips or beefed up mobile-phone chips will be more successful in these new intermediate categories, says Nathan Brookwood of Insight64, a consultancy. PC chips can run lots of popular software, and are familiar to armies of programmers. Mobile-phone chips use less power—for the moment, at least.

As the battle unfolds, mergers may ensue. Already there are rumours that Nvidia could combine with either AMD or Via. With chipmakers trying to muscle in on each other's territory, competition in the industry is suddenly heating up.

Class-action lawsuits

Jailing the bogeyman

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From The Economist print edition

The fall of a feared legal entrepreneur

FOR years Melvyn Weiss was the most hated man in the boardrooms of corporate America—exhibit A for any boss minded to fulminate about how lawyers were sucking the lifeblood out of capitalism through frivolous lawsuits that distracted bosses, discouraged risk-taking and cost shareholders billions of dollars. Now Mr Weiss is off to jail, after being handed a 30-month sentence (and a fine of nearly $10m) on June 2nd. Corporate America is cheering him on his way.

Mr Weiss always claimed to be the shareholder's friend, having pioneered an amazingly lucrative legal innovation, the shareholder class-action lawsuit. This amounted to waiting for a firm's share price to fall, searching for some way to blame this on management (an inappropriate public comment, say), and suing for compensation on behalf of shareholders. Some courts awarded huge sums to shareholders, prompting firms increasingly to settle out of court.

Bosses were sometimes guilty of harming a firm. Defenders of Mr Weiss's innovation argue that the threat of litigation has made this less common. And in recent years, some settlements have included improvements in corporate governance as well as payments. Yet the flaw in the whole approach was that the bill for any settlement was ultimately paid by the firm's shareholders. In effect, they were suing themselves, even if the shareholder register changes somewhat, and paying Mr Weiss (and the army of lawyers who followed his lead) handsomely for the privilege. Over the years firms have paid out at least $45 billion as a result of such lawsuits. In 2007 Mr Weiss's firm was lead counsel in 17 suits that settled for a combined $3.8 billion.

Mr Weiss (and his business partner, Bill Lerach, who received a two-year sentence in February) have not been jailed for their innovation, but for making payments to people bringing cases. This was reckoned to give them more control over the conduct of a case. And according to a recent study by Michael Perino, a law professor at St John's University, this let them charge slightly higher fees.

It has supposedly been getting harder to bring shareholder lawsuits since the law was changed in 1995. More recently, America's increasingly “pro-business” Supreme Court has ruled against class-action litigants in several important cases. Yet even without Mr Weiss, 2008 is shaping up to be a bumper year. Adam Savett of Institutional Shareholder Services, a research firm, predicts around 280 lawsuits this year, well up on the past two years, though still below 2001's Enron-era peak of 485. The main reason? Higher stockmarket volatility, says Mr Savett, which means many more appearances from Mr Weiss's old ally, the tumbling share price.

Electronic tickets

Who needs paper?

Jun 5th 2008
From The Economist print edition

Airlines do away with paper tickets

IT WILL not be long before paper tickets for a plane, train or bus seem as quaint as propellers, steam and conductors do today. Electronic travel passes are already widespread in many cities. And on June 1st the airline industry completed its conversion to electronic tickets, putting yet another nail in the coffin of the paper-based kind.

This has been quite an achievement—not least because it was completed in just four years. A task force was set up in 2004 by the International Air Transport Association (IATA), a trade group, to manage the change among the 240 airlines it represents, covering more than 90% of international flights. Tens of thousands of travel agents also had to change their systems.

The incentives to move to e-tickets were huge: a paper ticket costs around $10 to process, whereas an e-ticket costs just $1. IATA's member airlines issue more than 400m tickets a year. The association is now trying to turn the mountain of paperwork that accompanies air freight into electronic form, too.

For passengers, lost tickets should become a thing of the past. E-tickets can also be changed more quickly, and they speed up self-service check-in. They can even be delivered to a mobile device in the form of a two-dimensional bar code, a square pattern of dots that can be scanned at the gate and used as a boarding pass. Continental Airlines began testing such a system in Houston in December and is now extending it to Washington National, Newark and Boston's Logan airport. A similar approach enables mobile phones to store tickets for sports fixtures or nightclubs.

Where physical tickets do survive, it is likely to be as contactless plastic cards, such as London's Oyster and Hong Kong's Octopus. An even more sophisticated version of this technology will be used to grant access to the opening and closing sessions of the Beijing Olympics. The cards will store personal data including a photograph and the passport details of the holder. China says this is for security reasons, but it has the helpful effect of making the ticket non-transferable. In the future, ticket touts will need to be good at hacking.

Airlines

It's an ill wind...

Jun 5th 2008
From The Economist print edition

High fuel prices are hurting some airlines more than others

“DESPERATE,” wailed Giovanni Bisignani, summing up the plight of the air-transport industry. Speaking at the industry's annual bash in Istanbul, the director-general of IATA, its trade body, lamented that 24 airlines had gone bust since January. Airlines are squeezed between high oil prices and falling passenger demand in America and Europe. He predicted that if the oil price does not fall, airlines will swing from a combined profit of $5.6 billion in 2007 to a loss of $6.1 billion.

Many airline executives fear that after the cost-cutting that swept through the industry in the wake of September 11th 2001, they no longer have any fat left to trim. The speck of comfort for some is the hint that the predicament of the budget airlines could be worse still. A fortnight ago Willie Walsh, the boss of British Airways (BA), said he believed that “the era of very low fares is behind us...the industry has no future if it doesn't price in its costs.” Already, big airlines are following the lead of the low-cost airlines and levying what have euphemistically become known as “ancillary” charges. These include making passengers pay extra for luggage that has to go in the hold, and for in-flight meals.

Mr Walsh and others like him believe that the inevitable increases in fares and the imposition of fuel surcharges will hurt the budget airlines most, because their brands are synonymous with “give-away” seat prices. That, in turn, they argue, will strike at a vital part of the no-frills business model—the kind of cheap, discretionary short breaks that people either choose at the last minute or because they have taken advantage of a tempting special offer.

It is an analysis that may prove half-right and half-wrong. Among the weaker low-cost carriers, most of which are already losing money, the latest turn of the screw could prove to be fatal. But it would be a big mistake to conclude the same about either of Europe's dominant budget airlines, Ryanair and easyJet, with their strong balance sheets, modern fleets and strong cultures of low-cost operation.

Ryanair's combative boss, Michael O'Leary, seems almost to welcome Mr Bisignani's Jeremiad. Announcing a 20% increase in full-year profits to €481m ($680m) on June 3rd, he admitted that if oil prices do not fall, his airline will merely break even in this financial year. But his message was still bullish. “A downturn in the industry is badly needed,” he said. “The great thing about oil at $130 a barrel is that you will hear less of this environmental guff about taxing air travel, and it will see off a lot of the inefficiency in the system.” He not only expects some airlines to disappear, but he believes that the likes of BA, “which is levying surcharges faster than it's losing bags at Terminal Five”, will end up handing more business to Ryanair.

Geoff van Klaveren, an airline analyst at Exane BNP Paribas, calculates that BA's £6 ($12) fuel surcharge on short-haul flights would be worth an 8% yield increase for Ryanair and 6% for easyJet. With healthy advanced bookings, he expects pricing for both airlines to be “very strong” this summer. EasyJet's boss, Andy Harrison, is quieter than Mr O'Leary, but actions can speak louder than words. At the end of May he bought nearly £500,000 ($1m) of shares in his company.

Book publishing in America

Unbound

Jun 5th 2008 | LOS ANGELES
From The Economist print edition

Publishers worry as new technologies transform their industry

JEFF BEZOS, the founder and chief executive of Amazon, destination for nearly four-fifths of online book buyers, appears harmless. But to some in the publishing industry, he looms like a recurring nightmare. Having upset booksellers' apple-carts in the 1990s with his online stores, he is now widening his assault on the industry, as he personably explained in a speech at Book Expo America (BEA), a trade fair in Los Angeles, on May 30th.

From the outside, book publishing looks like an impregnable edifice: 411,000 new titles were published in America last year, and more than 3 billion books sold there. Growth was 4.3% in the "adult trade" segment, the mainstay of the market. In fact, the existing order is fragile. Reading in America, as in many rich countries, is down. A study by the National Endowment for the Arts, an independent federal agency, says leisure reading is declining, especially among the young. Since 1985, books' share of entertainment spending has fallen by seven percentage points.

AP



You're all doomed!

Books have changed very little in half a millennium, but they may now be on the verge of going digital. The first high-resolution e-book reader, made by Sony, came out in 2004. Last November Amazon launched the Kindle (pictured), a $359 e-book reader with a high-speed wireless link to the firm's online store, allowing e-books to be downloaded in seconds. Mr Bezos says Kindle e-books now account for 6% of sales of the 125,000 titles available in both print and electronic formats.

Though they are an improvement on a computer screen, e-book readers remain crude simulacra of books. A poll released by John Zogby at BEA found that 82% of Americans strongly prefer paper to pixels. None of the handful of e-book manufacturers will divulge sales figures. First-quarter sales of mass-market e-books in America have tripled since the same period in 2005, but they were worth just $10m.

But Kindle and its kind are merely the first generation of a product that is sure to evolve quickly in the coming years. Eventually, e-books point the way towards a cleavage of content from platform, threatening publishing with the wholesale change that has hit the music industry. It is a familiar story: fearing piracy, publishers are already adopting various mutually incompatible security technologies that are sure to annoy readers—although ePub, a new standard backed by many big publishers, may clarify things.

Unlike digital music or video, digital books require consumers to change their consumption habits. In some categories, such as textbooks, digital books are growing rapidly. As well as reducing costs by eliminating printing, warehousing, shipping and returns, this transformation could help publishers such as Elsevier and Springer recapture America's $2.3 billion college textbook-resale market.

Although e-books may one day transform the industry, another new technology that is less visible to readers is already making itself felt. Print on Demand (POD), which allows books to be printed and bound to order, is making millions of books available even if they appeal to only a narrow readership. Here, too, academia leads the way. Stephen DeForge of Ames On-Demand says his POD business, which specialises in printing small runs of customised books for schools and universities, has been growing by 45% a year since 2001. Last year his firm printed more than 800,000 books in runs as small as ten copies at a time.

The opportunity has not been lost on Mr Bezos. In March Amazon announced that it would require all the

POD books it sells to be printed by the company at its warehouses. Mr Bezos says that this enables Amazon to have a book ready to ship within two hours of an order being placed online. Between POD and the Kindle, Mr Bezos thinks he can sell “any book ever printed in any language”. But printers and distributors, like booksellers before them, fear the oncoming Amazon juggernaut.

Technology is also opening up new formats. Serialisation is making a comeback: a firm called DailyLit divides e-books into small chunks for drip-feeding by e-mail. Harlequin, a Canadian publisher of romantic fiction, sells short-fiction e-books for reading on PCs or other devices in a lunch hour. Last autumn the firm, which sells around 130m books a year, became the first big publisher to offer its entire catalogue in both printed and digital formats. Brent Lewis, who runs Harlequin's digital business, says his firm's digital readership is composed of the same middle-aged women who read its printed books.

An economic slowdown may play to the new technologies' strengths. The costs of printing and shipping paper and cardboard are rising. Mr DeForge says POD is now cheaper than standard printing for runs of fewer than 1,200 copies, and the threshold is rising quickly. And if consumers become more price-sensitive, e-books may become more appealing. This week's Kindle bestseller, a political memoir by Scott McClellan, a former White House spokesman, can be downloaded from thin air in less than a minute for $9.99. A paper copy costs $15.37 on Amazon's website, and will not be in stock for three weeks.

Publishing has only two indispensable participants: authors and readers. As with music, any technology that brings these two groups closer makes the whole industry more efficient—but hurts those who benefit from the distance between them.

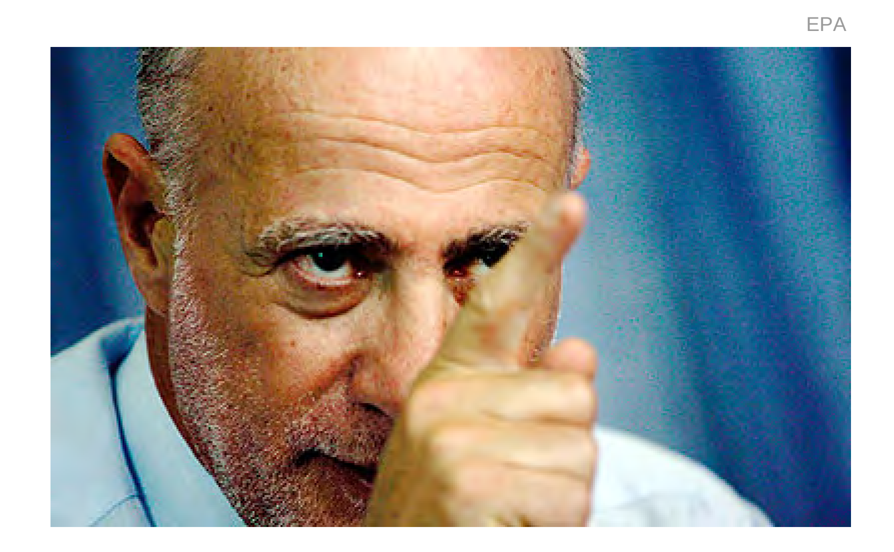
Face value

Africa calling

Jun 5th 2008
From The Economist print edition

Michael Joseph of Safaricom highlights the promise—and peril—of doing business in Africa

EPA



THIS is a vexing time for those looking to invest in Africa. There are prophets of doom, who predict that population growth and climate change will condemn Africa's cities and dry countryside to crisis and collapse. But there are also optimists, such as Michael Joseph, the head of Safaricom, a Kenyan mobile-phone operator. His is a remarkable African success story.

When Mr Joseph arrived at Safaricom in 2000, the company had 20,000 customers. It was controlled (as it still is today) by Vodafone, a giant British group that is one of the world's largest mobile operators. Vodafone's bosses reckoned that the Kenyan market would top out at 400,000 customers. Yet Safaricom alone now has 10.5m. It is the most profitable business in eastern and central Africa, earning profits of $223.7m in the financial year to the end of March, up 16% on the previous year. Despite a political crisis in January in which over 1,200 Kenyans died and 300,000 were displaced, the firm is expected to report even better results this year. And a public offering of 25% of the firm—a stake that belongs to the government—is expected to raise at least $800m, much of it from retail investors who queued up to buy the firm's shares, which will begin trading on June 9th.

Mr Joseph arrived in Kenya in 2000 having spent a freezing winter in Hungary, where he had set up that country's third mobile-phone network. He quickly decided to go after “pay as you go” customers, who pay for mobile airtime in advance, and therefore do not pose a credit risk to the operator, though they spend much less than wealthier (and less numerous) contract customers. He introduced billing by the second—a big deal for those earning just pennies a month. And he revamped the firm's brand, reasoning that the poorest customers are the most price-sensitive, and that a strong brand can help keep them loyal.

Keeping the Safaricom name inherited from Telkom, the state fixed-line monopoly, Mr Joseph and a local advertising firm set out to create an “emotional connection” between Kenyans and Safaricom. He took an “old school” approach, playing on the company's status when it had been established a decade earlier as a symbol of national pride—as the first mobile operators were in many countries at the time. These days only Kenya's national beer, Tusker, with its elephant label, can match Safaricom for national appeal. A typically shameless television advertisement shows Masai herdsmen gathering cattle before a dusky Rift Valley sunset to the backing of the English hymn “I Vow to Thee, My Country”. Some think Safaricom offers a lesson to mobile operators in Europe and the Middle East: take advantage of your affiliation with a multinational brand when it comes to technological know-how and buying equipment, but keep quiet about it to your customers, and dress up your network in national colours.

Mr Joseph was picked for the Kenyan job because he lacked the finishing-school polish required to be a European boss. In some ways it was a homecoming. A self-described "Bolshevik character" in his South African youth, he fled the country in the 1980s when the strictures of apartheid tightened. He had made his name there as a "network man", upgrading the coal railway through East Transvaal and setting up electric pylons in the Drakensberg mountains. He pitched up in America just as the mobile-phone revolution was about to start. He then worked on bids to set up networks in Spain, Greece, South Korea and Brazil. His proudest engineering moment was building Argentina's first mobile network, "the fastest-built in the world," he says.

But his most enduring achievement is likely to be M-PESA, a pioneering service that enables Safaricom's customers to send money to each other by text message. Cheaper and faster than ordinary money transfers, it now moves $1.5m a day across Kenya, in mostly tiny transactions, and is being rolled out in India, Tanzania, Afghanistan and elsewhere. Mr Joseph brazenly calls it the mobile-phone industry's greatest ever innovation. That is an exaggeration—but not a very big one. Mobile banking could be the next stage of mobile-driven economic transformation.

Dial T for trade

Some have criticised Mr Joseph and Safaricom for failing to reveal the owners of a mysterious 5% stake in the company, built into the original deal, which probably enriched people close to the previous government. But by the turbid standards of corporate Africa, the company is clean. Can Safaricom's fairy-tale be matched in other industries? Mr Joseph is bullish. He refused to buckle under immense pressure from Kenyan intelligence to ban text-messaging during the riots and never lost hope during Kenya's political crisis, though he admits the country may have been only two weeks away from collapse. It would be folly, he insists, to bet against a continent as rich and resilient as Africa.

Mr Joseph wants M-PESA to offer new services, such as mortgage payments. He also wants to plough funds into expanding internet access in Kenya using high-speed "third-generation" mobile networks. At 62, Mr Joseph reckons he has three more years left at Safaricom before retiring, perhaps to the house he keeps in northern Kenya, circled by rhino and leopards. Until then he must fend off competition. Not from Celtel, Kenya's second provider, which seems content to earn dividends in Safaricom's shadow, but from France Telecom, which recently bought 51% of Telkom, the state fixed-line monopoly, and Econet, a new Indian-owned network.

Mr Joseph is not shy in weighing in on the perennial question of aid versus trade. The ability to get a phone line without an address or credit for less than $1, he says, "has been hugely more efficient than aid". Since 70% of the economy is informal and government services are ragged, there is probably some truth in his claim that Safaricom has done more to help Kenya than decades of aid. At the very least, it offers a powerful lesson for would-be investors in Africa: it can pay to bet on the poor.

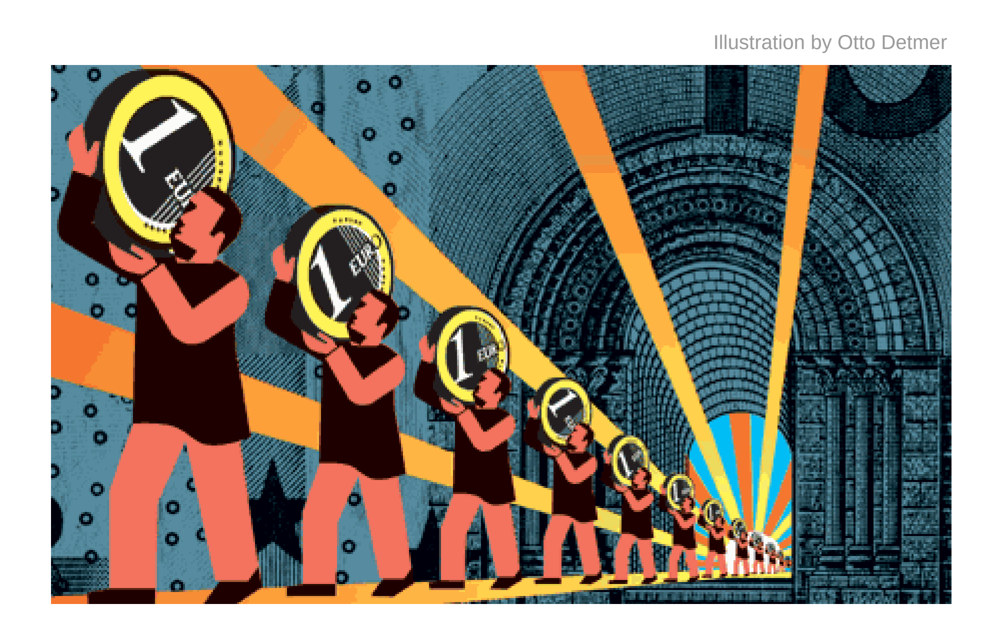
The ECB at ten

A decade in the sun

Jun 5th 2008
From The Economist print edition

The ECB has had a good credit crisis and a solid first decade. That was the easy bit

Illustration by Otto Detmer



IF A currency's market value is a proxy for the status of the central bank that stands behind it, then the European Central Bank (ECB) is now ranked higher than any of its peers. The euro reached a record high of $1.60 on April 22nd and trades only a little below that peak today. By contrast, the dollar, the world's reserve currency, is barely above its all-time low against a basket of leading currencies. The yen has seen better days too, even compared with the lowly dollar. And sterling, which had been riding high for so long, has fallen to new lows against a resurgent euro.

The ECB, which celebrated its tenth birthday on June 1st, is having its time in the sun. Much of the criticism of its early years now seems misplaced. Many foresaw disaster in knitting together a disparate group of central banks—Martin Feldstein, a Harvard economist, even warned that the euro could lead to war.

In fact, the ECB's diverse origins recently proved a blessing. When the ECB intervenes in money markets to shape interest rates, it accepts a wide range of collateral, including less liquid assets such as mortgage-backed securities. This liberal regime came from meshing together Europe's different rules. But it saved the day in August 2007, when banks needed to swap illiquid assets for cash to stay afloat. Indeed, the crisis drove the central banks in America and Britain to mimic the ECB's set-up.

The ECB's response to the credit crunch has quietened critics who think its desire for consensus makes it slow to act. The bank's six-strong executive board moved quickly to intervene last summer, when severe strains in money markets started to appear. As overnight interest rates shot up on August 9th, the ECB met and within hours had sanctioned an unlimited offer of one-day loans, at the prevailing policy rate of 4%, to help ease the cash squeeze.

Fears that the ECB's governing council, the 21-strong group that decides interest rates, would be fragmented and swayed by parochial concerns have so far proved groundless. Some ECB-watchers now fret that the opposite is true: that the 15 national central-bank governors traipse to Frankfurt twice a month to rubber-stamp decisions taken by the executive board, permanently based at the ECB's headquarters. The worry that the governing council would lack cohesion has been replaced by unease that it lacks variety in opinion and experience. Most of its members are career central bankers or civil servants.

The criticism raised in the ruins of the dotcom bust—that the bank was too cautious in cutting rates to support growth—has given way to praise that it is reassuringly watchful about inflation. Even its attention to money-supply figures, which seemed quaint when the ECB was first set up, has come back into fashion. It is now widely accepted that rapid money-growth is a useful early warning of credit and asset-price bubbles, even if it is not a reliable predictor of rising inflation.

The communication fumbles under the ECB's first president, Wim Duisenberg, hurt the euro's standing and value on foreign-exchange markets. These are now forgotten. His successor, Jean-Claude Trichet, has enforced greater discipline and governing council members refrain from commenting on the euro's exchange rate. On such matters, the ECB now speaks with one voice: Mr Trichet's. It is a measure of how things have changed that he has to be careful not to say anything that might drive the euro up, rather than down.

The ECB's recent success owes something to good fortune. The bank's collateral regime was not designed with a future crisis in mind: it just happened to be the right one for the time. It did not rush to cut interest rates to limit the fallout from the credit crunch, but the ECB was still tightening monetary policy when the crunch started in earnest. So, for all its apparent implacability, the bank is running a looser policy than it would otherwise have done.

Still, so many things have come right for the ECB so quickly, that it deserves a lot of credit. The question is: will its second decade be as good as its first?

Hamstrung

One danger is that fractures within the euro area will distract the ECB from staying on top of inflation. A particular worry is what could be called the PIGS—Portugal, Italy, Greece and Spain, Europe's negative version of the fast-growing BRICs. The fear is that these countries may be in a hole they cannot easily climb out of and that the ECB will be pressed into running a looser monetary policy to save them.

Portugal, Greece and Spain have all enjoyed a cyclical boost that eventually led to overheating. Portugal's economy was the first to break down and is a warning to the others. Its boom in the second half of the 1990s was fed by a sharp decline in borrowing costs on the mere prospect of euro membership. The unemployment rate fell as low as 3.8%, but a red-hot economy fuelled wage inflation, which made it harder for local firms to compete with foreign rivals. Rapid growth in spending sucked in imports, and the current account, which was in balance in 1995, had sunk into a deficit of 10% of GDP by 2000.

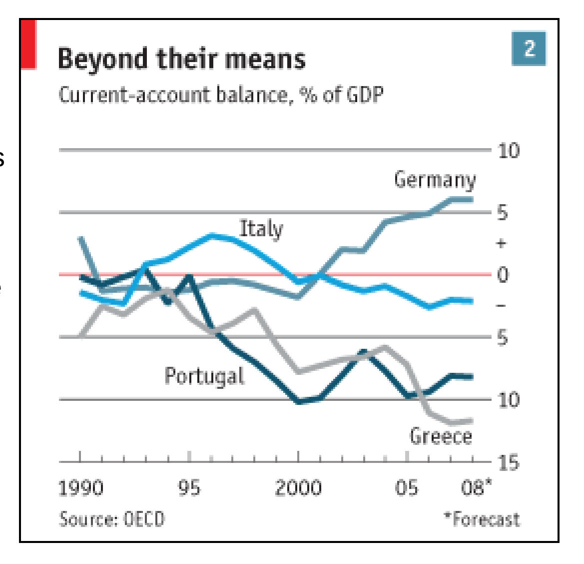
Portugal has since struggled to regain its cost advantage and so it has failed to get its economy moving again. Its current-account deficit is still large, at 8% of GDP, and unemployment, at 7.6% in the first quarter of this year, is almost double the rate at the end of the boom years. GDP has fallen in two out of the past three quarters.



Spain and Greece enjoyed similar booms and may now be about to suffer a similar hangover (as, indeed, may Ireland). As in Portugal, there has been a rapid loss of international competitiveness. Wage costs in both countries have risen sharply compared with their main trading partners since 1999 (see chart 1). Spain's current-account deficit widened to almost 10% of GDP by last year; Greece's shortfall was 12% of its GDP (see chart 2).

Italy has not followed exactly the same path, but shares some of these ills: a high real exchange rate, a current-account deficit and a weak economy. Worse, it missed out on the boom after the euro. Instead, it has

suffered from the slowest growth in the euro area, alongside Germany. And its loss of competitiveness has been every bit as bad as Spain's. So it is in many ways the biggest casualty of the new system.



The difficult job of running a multi-speed currency zone is hardly new to the ECB. For most of the central bank's first decade, Germany was the euro-area's laggard, limping along while its southern partners strode ahead. Germany slowly regained the cost competitiveness it lost after unification. It did so the hard way—by keeping wage growth below consumer-price inflation and by boosting productivity. As a result, Germany's real exchange rate has dropped by 10% since 1999 and its current-account has moved from a deficit of 2% of GDP to a surplus of 6% last year. The German economy is enjoying a revival, even as others struggle.

Other countries burdened with high labour costs could yet follow a similar path to redemption. Many euro-area countries besides Germany have experience of cost-cutting and of living with a strong or fixed exchange rate. Austria's currency links with Germany date to the 1970s; France stuck with its “franc fort” policy in the 1980s; Ireland's economic miracle predates the euro and was built on restructuring; and Finland weathered the early 1990s. But, as Thomas Mayer at Deutsche Bank points out, the countries struggling now do not share this pedigree. Italy, in particular, has a history of resorting to devaluation to restore competitiveness.

That is not an option in a currency union. A more likely gambit, says Mr Mayer, is for weak economies to blame the ECB and the euro so as to press for lower interest rates. A gang of ECB-bashers fronted by Italy and France might emerge if GDP growth in the euro area's worst performers stays weak. Mr Mayer wonders whether the central bank could then pursue its inflation objective at all costs. The ECB, he says, does not have the public support that Germany's Bundesbank had and so is vulnerable to political pressure. The upshot could be a “soft euro”—a currency made weak by lax monetary policy.

Some people argue that the strains of living with the same short-term interest rate could even lead to the break up of the euro area. But the cost for any of the PIGS of leaving would be far higher than the short-term fix from devaluation. Indeed, Mr Mayer reckons a breakaway by a “hard euro” faction of strong economies is more plausible—if still highly improbable.

Such fears are not new. Forecasts that economic divergence would break the euro apart date back to well before the single currency's launch. Senior ECB officials point out that the regional strains within the euro area are not much greater than those in America, the only other currency zone of comparable GDP. A one-size-fits-all interest-rate policy is the price you pay for the benefits of a monetary union. If countries such as Spain, Greece and Ireland had still had their own currencies, the credit crunch would probably have damaged them more than it did.

Angel Ubide, an ECB-watcher at Tudor Investment Corporation, believes too much is made of economic divergence. “Being a member of the euro is now a fact of life,” he says. Countries will make the best of their circumstances. Spain's economy may be struggling, but it has a fiscal cushion to ease the transition from housing- to export-led growth. Spain's budget surplus was 2% of GDP last year. If it moves to a deficit of 3% of GDP, that would provide a huge fiscal stimulus.

Indeed, the loss of competitiveness in Spain (and elsewhere) may be more apparent than real. The trend in productivity could be stronger than official data suggest, because much of the country's recent growth has been in the construction industry, where efficiency is low. Mr Ubide believes that the monetary straitjacket will lead to faster reform. When GDP growth was healthy, there was little incentive to liberalise the economy. With growth faltering, the hope is that there may now be more urgency to tackle the over-regulated product markets that are Spain's greatest barrier to higher productivity.

The nice decade turns nasty

Reform is easier to call for than to carry out. But without it, monetary policy may well stray from controlling inflation. This task is in any case likely to prove much tougher in the ECB's second decade. Until the recent oil-price shock, the inflationary conditions for central banks in Europe and America had generally been fair. In his book, "The Age of Turbulence", Alan Greenspan conceded that "globalisation's vast economic migration"—which pushed billions of low-wage workers from formerly centrally planned economies on to the global labour market—helped to contain inflation during his time as Federal Reserve chairman. The economic efficiency that came with wider use of information technologies provided a further check on prices.

IT-led gains in productivity may now be petering out and Mr Greenspan expects the downward pressure on inflation from globalisation to recede too. A stiffer monetary policy will probably be needed to curb price pressures. Mr Greenspan reckons the Fed may sometimes have to take short-term interest rates into double digits to keep inflation in a range of 1-2% over the next generation. That could easily trigger a backlash against the central bank.

The ECB may worry less about politics than the Fed, since its independence is enshrined in the Maastricht treaty. But if the social costs of capping inflation rise, the ECB will have an equally hard time making the case for price stability.

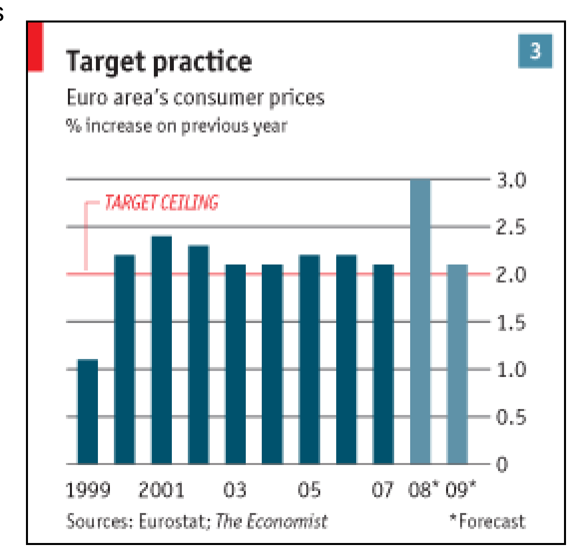
Indeed, some argue that the ECB's distance from politics only strengthens the need for it to be open about how it sets policy. Mr Mayer believes the ECB should own up soon that it will be more difficult to control inflation in the future. He sees merit in the system in Britain, where the central-bank governor must write a letter to the finance minister when inflation moves outside 1-3%. He suggests Mr Trichet should also have to write to the head of the Eurogroup—the euro-area's finance ministers—explaining how soon and at what cost inflation can be brought down again.

Such an arrangement would improve understanding about how the ECB works and show that the bank is committed to low inflation. It might even lead politicians to speed up economic reforms.

Many believe that if the ECB published the minutes of its policy meetings, as other central banks do, it would explain the trade-offs that rate-setters have to weigh. But Paul De Grauwe, from Belgium's Leuven University, is sceptical: "Once minutes are in the public domain...[policymakers] will inevitably be more careful about what they say and it will push the important discussion outside the appropriate forum."

Mr De Grauwe thinks the ECB should instead announce a clear inflation target and publish an inflation forecast with a range of scenarios, rather as the Bank of England does. He also reckons the ECB's definition of price stability—inflation below but close to 2%—is too low, too exact and too skewed. It misleads the public that monetary policy is more precise than it really is and increases the chances that the ECB fails to meet its objective, which undermines its credibility. A central target within a range of tolerated inflation would be more realistic.

The ECB's first decade, when inflation was more often above its limit than below it (see chart 3), suggests that the target is too demanding. But if the ECB were to "clarify" its definition of price stability, it might dislodge people's expectations of inflation, which in turn would affect how future prices and wages are set. Charles Wyplosz, of the Graduate Institute in Geneva, thinks expectations will shift anyway. The bank has a choice of losing face by moving to a symmetrical target or losing face by missing a poorly specified goal.



In a recent speech in Brussels, Mr Trichet expressed satisfaction that the ECB had kept inflation to an average of 2.1% in its first decade. One or two tenths of a percentage point here or there is not going to keep anyone awake at night. Yet a central bank like the ECB, which sets policy for a large and diverse group, is in a dilemma. If it is explicit about the costs of enforcing its inflation objectives, it risks stirring up opposition in economies that are struggling. If it is vague, people may conclude that it is soft on inflation. Sometimes the ECB will have to be artfully elusive—as it

will discover in its difficult second decade.

Enlarging the euro

Faces at the window

Jun 5th 2008
From The Economist print edition

Lots of countries want to join the euro. But does the euro want them?

AS MORE countries adopt the euro, formulating monetary policy will only become harder. When the ECB was created in 1998 it set monetary policy for 11 prospective euro members. As the European Union has expanded, so the potential euro membership has grown too. Since the currency's launch in January 1999, four countries have joined—Greece in 2001; Slovenia in 2007; and Cyprus and Malta in 2008—taking the membership to 15. Britain has an opt-out. Denmark has one too, though it is planning a referendum on joining—which polls suggest it will win. The remaining ten EU states that are outside the euro must join once they meet targets for inflation, interest rates, exchange-rate stability and public finances—the “convergence criteria”.

Sweden will do nothing to meet these criteria, following a popular vote against membership in 2003. The other nine possible members, which joined the EU on or after January 2004, are far keener—yet may be kept out even so.

All are former centrally planned economies, with an income per person below the EU average. Slovakia is due to join the euro in January 2009: the commission has given its blessing, though the ECB frets that inflation may then pick up. The rest meet a good share of the convergence criteria for public finances, long-term interest rates and currency stability. All but Poland miss the test for low inflation by a mile.

This could prove a barrier to euro entry. Prices tend to climb faster in poorer countries, because wages for local services, where productivity grows slowly, rise to keep pace with pay in more efficient and capital-intensive export industries. The expectation of euro entry has added to the price pressure by pulling in capital. This inflow has created asset and credit booms, adding vigour to already-fast-growing economies.

Indeed, the ECB may prefer to keep transition economies out until their convergence booms are exhausted. The keenest to join are the three Baltic states—Latvia, Lithuania and Estonia—which already peg their currencies to the euro. Inflation is high, but their economies are tiny: they would hardly affect the euro-area rate if they joined. They are also too small to operate an independent monetary policy to curb inflation.

Yet because the Baltic countries fail the inflation criterion, the chances of their joining soon are slim. Charles Wyplosz, of the Graduate Institute in Geneva, suspects the ECB is reluctant to take new members, in which the booms risk turning to busts. “One more country is one more source of trouble,” he says. Strictly, therefore, the rules mean that aspiring members will probably have to do a lot of their growing up outside the euro. In the meantime, they will bear the risks of managing their own currencies in economies open to huge trade flows and floods of foreign capital.

Economist.com FINANCE & ECONOMICS

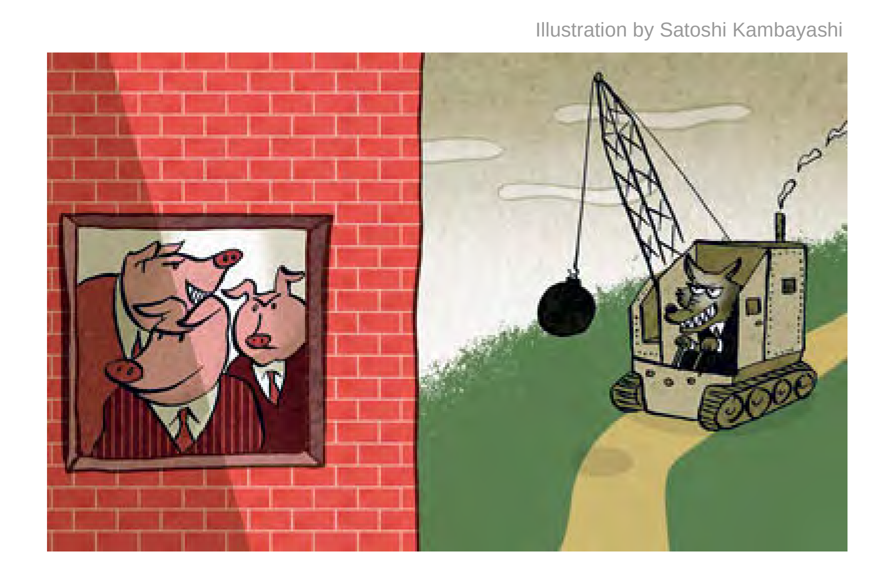
Investment banks

Out of the frying pan

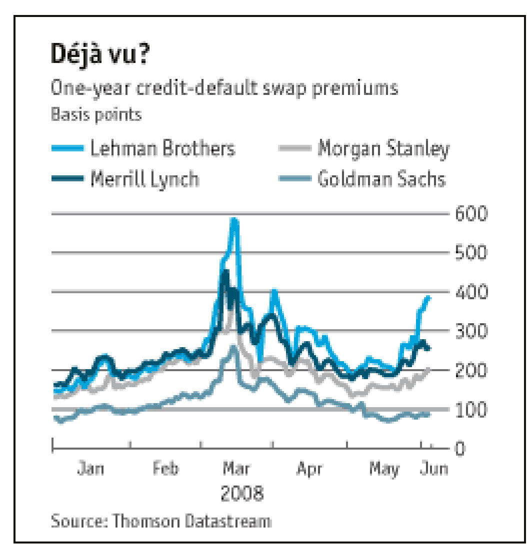
Jun 5th 2008 | NEW YORK
From The Economist print edition

And into the line of fire of those keen to constrain Wall Street's free-wheeling ways

Illustration by Satoshi Kambayashi



“THE worst is behind us,” proclaimed Dick Fuld, Lehman Brothers' boss, in April. If only. Although the overall financial system may be safer, thanks to extraordinary central-bank interventions before and just after the rescue of Bear Stearns, America's investment banks still make investors nervous, not least in the market that puts a price on the risk of default (see chart). The longer this goes on, the more onlookers are tempted to conclude that Wall Street's business model is broken. With tougher regulation on the cards, this crisis may, they fear, be less a cyclical slump than the start of an era of less risk-taking and lower returns—in effect, the neutering of Wall Street's finest.



All the investment banks have taken a thumping this year, but Lehman looks the most vulnerable, as it did just after Bear's near-implosion in March. Despite putting itself on a firmer footing by raising capital, it still has more than $60 billion of hard-to-sell securities. Its hedging attempts have gone awry, leaving the bank facing its first quarterly loss as a public company when it reports in mid-June. Lehman's shares tumbled this week to a five-year low after its debt was downgraded, amid reports that it is looking for a deep-pocketed partner. This prompted Lehman to rush out the news that its liquidity position had risen to “well above” $40 billion. It also said that it had not needed to borrow from the Federal Reserve since mid-April.

This financing window was opened to investment banks the day after JPMorgan Chase bought Bear—the first time non-deposit-takers have had access to central-bank money since the 1930s. It means that, although doubts about Lehman's health linger, it is unlikely to run out of short-term funds. Even if the window is shut in September as planned (most bankers assume it will be kept ajar), no one doubts that the investment banks are now considered too systemically important to fail, thanks to their labyrinthine derivatives books.

They all accept the inevitability of greater scrutiny in exchange for acquiring a lender of last resort. Bankers say Fed officials are checking their books much more closely than their Securities and Exchange Commission supervisors ever did.

Commercial banks argue that investment banks should now face the same capital constraints as they do, because of the Fed window. The strength of opposition to this varies: Lehman seems prepared to accept tight shackles, whereas more self-confident firms, such as Goldman Sachs, believe they deserve less regulation because they are funded in wholesale markets, not by government-guaranteed deposits. "[Goldman's] approach is still 'Screw you, don't hold us back. We're the world's best traders'," says one rival.

With the situation still fluid, there is plenty of scope for lobbying against rules that could hurt profits—though banks say they are not yet at that point. Sheila Bair, head of the Federal Deposit Insurance Corporation, has come out in favour of tighter oversight of capital and risk management. Ben Bernanke, the Fed's chairman, seems to be leaning in that direction. But there is, as yet, no consensus. It is not even clear whether the preference is for firm rules or general guidelines. Congress is unlikely to debate an overhaul of financial regulation until next year, after the election.

One possibility is to limit the sort of overnight funding in repo markets that caused Bear such distress. Don Kohn, the Fed's vice-chairman, has proposed that investment banks be forced to cut such funding in favour of longer-term, more expensive finance, reducing both their incentive to jack up leverage and the risk of liquidity draining away in the blink of an eye.

The banks have already made headway on this front. Lehman has been grabbing whatever long-term financing it can, and only a tiny fraction of Goldman's funding comes through repos or commercial paper. Goldman is thought to be happy to see tougher rules on funding, because it would reduce the risk of counterparties—including its rivals—going pop.

Leverage is thornier. A self-imposed reduction is under way, from levels above 30 times capital to nearer 20. And the banks are taking seriously the possibility of regulators setting a low ceiling: at least one of them is calculating how it would perform if it were subject to commercial-bank-like requirements. Any such restriction would eat into their profitability, since leverage supercharges returns when bets pay off.

But dictating a lower leverage ratio would not cure all ills, the banks argue. Take a bank that invests $200m in Treasuries, mostly with borrowed funds. It sells them, pays off the debt, and invests the remaining $5m—its own money—in mortgage exotica. Its leverage has fallen, but its risk profile has increased. Straightforward leverage ratios "tell you nothing about the underlying quality of the assets", says Paul Calello, head of Credit Suisse's investment bank. Bear's capital levels, remember, looked adequate just before it capsized.

How will investment banks make up for the lower returns that come with less borrowing? One option is to turn their assets over more quickly. They might also be tempted to push deeper into risky areas that offer big margins even without leverage, such as the most exotic emerging markets. But this would simply substitute one gamble for another.

Some may also have more breathing room than they admit to. They can always move proprietary trading off the books and into their hedge funds, which can borrow as much as their investors will tolerate. Their revenue would then be limited to management and performance fees, but such an arrangement could leave the parent with a higher debt rating and lower cost of funds. It may even raise the industry's earnings multiple above the paltry ten or so that has been the norm on account of "black box" risks, thinks Roy Smith of the Stern School of Business.

As it becomes harder for investment banks to finance their own inventory of assets, some will refocus on client businesses, such as merger advice and securities underwriting. But these markets have shrunk, albeit less dramatically than securitisation and leveraged loans have.

Times may get harder in derivatives, too. Pressure is growing for more regulation in the booming credit-default-swap market, and for more trading to move to exchanges. This would eat into the margins of dealers who arrange bilateral trades, mostly American investment banks. In a sign of changes to come, this week InterContinental Exchange bought Creditex, a credit-derivatives broker, for $625m.

As the regulatory noose tightens, some are likely to conclude that a partner with a stable deposit base would be handy. In prime brokerage (lending to hedge funds), clients that a year ago did not differentiate between universal and investment banks are now leaning towards the former, viewing them as more robust. "The banks are taking the markets back," says Dick Bove of Ladenburg Thalmann, a broker.

Whether this lasts will depend on the strength of the shackles placed on investment banks, and their dexterity in wriggling out of them. In the past they have proved adept at killing off proposed rules or circumventing them. But regulators and politicians seem in no mood, for the moment at least, to let that happen this time. For Wall Street's free-wheelers, the worst may indeed be yet to come.

Buttonwood

Recovery? What recovery?

Jun 5th 2008
From The Economist print edition

The credit crunch looks far from over

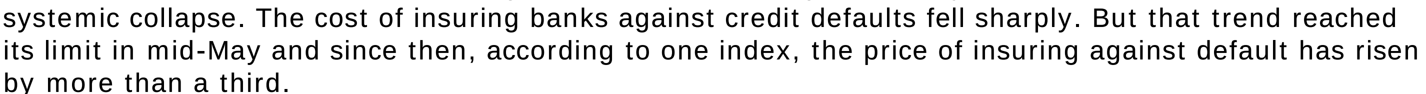
Illustration by Satoshi Kambayashi



IN MAY many investors took comfort in the view that the worst of the credit crisis may be over. But, as in 1939-40, says one hedge-fund manager, it was just “the phoney war. The tanks are about to roll into France.”

The gunners have certainly had plenty to aim at this week. Whether it was the downgrading of investment-bank debt, the purging of top brass at Wachovia and Washington Mutual, two large American banks, or the reconfigured rights issue at Bradford & Bingley, a troubled British mortgage lender, the news on both sides of the Atlantic has been grim.

Many hoped that the Bear Stearns bail-out in mid-March would prove the climactic event of the subprime crisis. After all, it seemed to imply that the Federal Reserve was standing behind the banks to prevent any systemic collapse. The cost of insuring banks against credit defaults fell sharply. But that trend reached its limit in mid-May and since then, according to one index, the price of insuring against default has risen by more than a third.



In any case, stockmarket movements suggest that bank shareholders were far less enthused by the Bear Stearns news. That is partly because investors fear the banks will have to follow Bradford & Bingley and Royal Bank of Scotland, a big British bank, and tap shareholders for additional capital.

Another sign of strain is the gap between money-market rates and official rates, which is still much wider than the historical average. Matt King, a strategist at Citigroup, says that this is not so much the banks' fear for the health of their competitors, as their reluctance to lend altogether.

Ever since last summer, the cost of funding for banks in the bond market has been higher than the cost of borrowing by non-financial companies. That makes bank lending unprofitable. In addition, the breakdown of the securitisation market makes it hard to get rid of loans. Worst of all, a forthcoming accounting change known as FAS 140 may force banks to take previous securitisations back onto their books; Mr King reckons some $5 trillion of assets will return to banks' balance sheets.

There has been, as yet, not much sign of a slowdown in lending. But that is because borrowers are taking advantage of the loan commitments made by banks during the boom years; some $6 trillion of these are still to be drawn down, double the level of five years ago. When it comes to new loans, the trend is clear. Surveys in both Europe and America show that banks are tightening their standards. In Britain the number of home mortgages taken out in April was just 58,000, down from 73,000 at the start of the year; in the euro zone bank lending to households is rising at its slowest rate since 2001.

The squeeze comes at an awkward time for consumers, hit as they have been by rising food and fuel prices and by (in America, at least) a softening labour market. Measures of consumer confidence have fallen sharply, although actual spending has not yet weakened to the same extent.

But consumer-default rates have started to climb sharply, as Bradford & Bingley's results revealed. And there will be write-offs on business loans as the year goes on. This bad news may already be reflected in the general level of corporate-debt spreads. But specific failures will still come as a nasty surprise to investors and institutions, and add to the malaise.

Of enduring concern are the monoline insurers, the institutions that agreed to guarantee some classes of

debt against default. On June 4th Moody's, a rating agency, said it was thinking again about downgrading the AAA ratings of MBIA and Ambac, two of the main monolines. The pessimists (who are betting on a further fall in the price of the shares) reckon their losses on subprime-related debt will turn out to be many times bigger than the monolines' present capital.

If the theme of last year was turmoil in financial services, then 2008 could be the year when financial stress goes on to harm the economy. And it is not too fanciful to imagine a vicious circle: as the economic downturn causes more financial pain, so confidence will crumble further.

It seems far too early to say the financial world has seen “the beginning of the end” of the credit crunch. Indeed, the rest of Winston Churchill's quote about the progress of the war may even be too optimistic. The world may not even have seen “the end of the beginning”.

Currencies

Dollar dilemmas

Jun 5th 2008 | WASHINGTON, DC
From The Economist print edition

Does the new dollar policy make sense?

AP



Speak loudly but carry a small stick

FOR several years two rules have governed America's dollar policy. The first was that only the treasury secretary talked at length about the greenback. The second was that he repeated a vacuous mantra about a strong dollar being in America's interests, even as everyone knew policymakers quietly welcomed its slide.

No longer. American officials are worried about the dollar. On June 2nd Hank Paulson, the treasury secretary, gave a forceful rendition of the strong-dollar rhetoric in Abu Dhabi. And on June 3rd Ben Bernanke, chairman of the Federal Reserve, dwelt on the currency in a speech to a European audience. He left no doubt that American officials did not want further dollar weakness. The greenback's slide, he said, had contributed to an "unwelcome" rise in inflation. And he made clear that, together with the Treasury, the Fed was "carefully" monitoring currency markets. "We are attentive to the implications of changes in the value of the dollar for inflation and inflation expectations."

By the standards of most officials' currency commentary, this was strong stuff, and the dollar duly strengthened—to $1.54 against the euro by June 4th. But bigger questions loom. What is behind America's new dollar policy and what practical consequences will it have?

Inflation worries are a prime motivation. According to the latest figures from the University of Michigan, consumers' long-term inflation expectations have risen to 3.4%, a 13-year high. Hence the central bankers must appear vigilant, which means they cannot afford to ignore the impact of the dollar.

A related goal is to minimise the risk of a dollar rout. The Fed's rapid interest-rate cuts have fostered an impression abroad that America's central bank does not care about the dollar. At the same time, Fed looseness has caused headaches for countries, such as many Gulf states, that peg their currencies to the dollar. These countries ought to allow their currencies to rise. But if investors are nervous about the Fed's commitment to the greenback, such a shift might lead to a dollar rout. As Ken Rogoff of Harvard University puts it, the Fed is "taking advantage of a respite in the financial crisis to shore up the dollar".

This sows many doubts—not least whether the Fed would, if necessary, back its dollar rhetoric with higher interest rates. For the time being, the signal is about the end of rate cuts rather than imminent rises. The jawboning also creates some odd tensions. America has long urged China to allow the yuan to appreciate faster against the dollar. Yet Mr Paulson suggested this week that the Gulf's currency pegs were not the cause of its inflation problems. Washington seems to want Beijing to revalue, but the Gulf states to keep their pegs. America's new dollar policy may be less absurd than its old one, but it is still a bit of a muddle.

Credit-rating agencies

Status Cuomo

Jun 5th 2008
From The Economist print edition

The rating agencies have got off lightly from regulation—so far

IF CREDIT-RATING agencies evaluated themselves in secret, they might well be upgrading their own outlooks. For much of the past year they were numbered among those most vulnerable to punishment for their role in the credit crisis, largely thanks to the generous ratings they doled out on dubious mortgage-linked securities. The agencies' profits have been hit. Both Standard & Poor's (S&P), owned by McGraw-Hill, and Moody's have reported steep declines in first-quarter earnings, as demand for rating such instruments has tumbled along with new issues. And there are still ugly loose ends: last month Moody's jettisoned its chief operating officer and faced potentially explosive allegations that some ratings may have been inflated by errors in its computer models. Nevertheless the shares of their parent companies have been fairly resilient this year, reflecting how muted the regulatory backlash has been.

That is not because of a shortage of scrutiny. At least six government or global industry bodies have been examining the rating agencies' role in the crisis. As *The Economist* went to press, S&P, Moody's and Fitch, the big three agencies, seemed on the verge of striking an agreement with Andrew Cuomo, the New York State attorney-general, who has been investigating their role in the mortgage market. Any deal would probably seek to prevent “ratings shopping”, in which new issuers play off rating agencies against each other in order to elicit the most generous credit rating. And it would probably force agencies to disclose more about the underlying collateral of the instruments they rate, in theory helping investors to reach their own judgments. This would complement a revised code of conduct drawn up by the International Organisation of Securities Commissions (IOSCO), a body of regulators. It wants agencies to scrutinise their own models and to improve transparency by, for example, ensuring that ratings of structured products are differently labelled from those of less volatile bonds.

For the agencies, which had already revised their business methods earlier this year, this is a far cry from the apocalyptic predictions of crippling fines and suffocating regulation. They will remain on edge until the Securities and Exchange Commission (SEC), with which agencies have had to register since last year, issues its own report this month. Still, until now the SEC's position has been to promote more competition in the industry, rather than act as a heavy-handed supervisor. Assuming its stance does not deviate much from IOSCO's, the two big underlying problems with credit ratings may be left untackled.

First, the agencies had an incentive to be lenient because debt issuers, rather than investors, pay for credit ratings. Second, many investors placed blind faith in these ratings, without conducting enough checks of their own.

The agencies will remain exposed to conflicts of interest, because their customers will remain the issuers. And with credit ratings enshrined in investment-fund mandates and bank capital-adequacy rules, some investors may continue to treat them as semi-official judgments. The agencies, against the odds, look in better shape than many of the instruments they once rated so generously.

India's GDP

Showers turning to storms

Jun 5th 2008 | DELHI
From The Economist print edition

Taking the heat out of India's economy

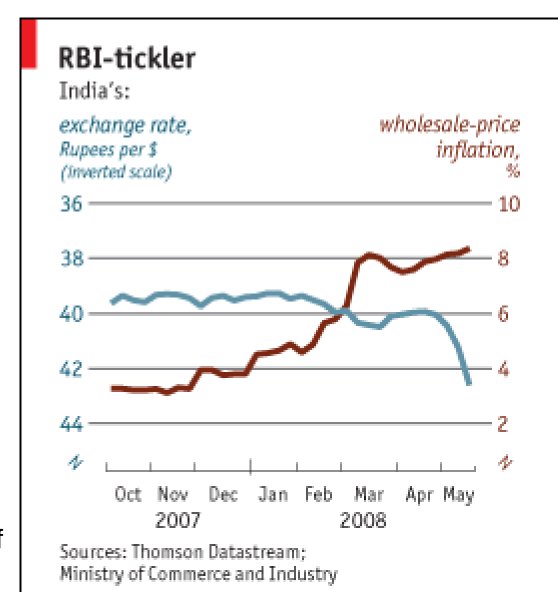
THE monsoon reached India on May 31st, dousing Kollam, a city in Kerala, in 19cm of rain. Good rains once guaranteed an economic boom in India, but that was in a simpler time. According to figures released a day before, India is now a $1 trillion economy, valued at market exchange rates. Farming, forestry and fishing accounted for less than 18% of the total.

But it still pays to keep half an eye on the clouds overhead. India's growth for the fiscal year ending on March 31st was revised up to 9% because agriculture did better than first thought. And if the monsoon meets expectations, the country may produce a record crop of grains this year.

That should help ease the price of food, which has contributed to a marked rise in inflation (now at 8.1% according to the wholesale-price index). The skies offer no relief for the soaring cost of fuel, however, which is threatening to rob the central bank of its inflation-fighting credentials, undo the government's fiscal progress, and cost the Congress-led coalition the next general election, due by May 2009.

To keep the voters happy, the government stops state-owned oil firms from passing on the higher cost of crude to their customers, compensating the firms with government-backed oil bonds. But those bonds are a growing fiscal burden. On June 4th the government modestly raised the price of petrol and diesel. It also cut import duties on fuel. That will stem the refiners' losses somewhat, but also add to the inflation that is angering voters.

It now falls to the Reserve Bank of India (RBI), the central bank, to stop inflation expectations rising. The RBI has promised to “act decisively, effectively and swiftly”. But it is caught between competing objectives. It thought it had won the battle against inflation, which fell as low as 3.1% in October, and had turned its attention to the rupee, which was then uncomfortably strong (see chart). Its successful efforts to suppress the currency, by printing rupees and buying dollars, has made fighting inflation that bit harder.



Perhaps a slowdown will do the RBI's job for it. The OECD has forecast growth of 7.8% this calendar year. But so far the weakening is not showing up in output figures. Despite a slowdown in manufacturing, the economy grew by a surprisingly strong 8.8% in the year to the first quarter.

The stockmarket, on the other hand, has lost about a quarter of its value since its peak on January 8th. Foreign institutional investors, who swept the market off its feet last summer, dumped shares in January and again in May. India's regulators, anxious to rebuff foreign admirers last year, are now inviting them back, allowing Indian companies to borrow more abroad and some foreigners who are not registered with the authorities to open “sub-accounts” with brokers who are.

India's equities were due for a fall, having reached valuations of over 28 times earnings at their peak. But the bearishness may also reflect a deeper concern that India's remarkable run is coming to an end. Inflation will take some beating and the country's fiscal termites are gnawing once again. It is not just the oil subsidies. The government is committed to raising the pay of millions of civil servants, and as the rains fall on the fields, it has promised to erase farm loans worth about 710 billion rupees. The combined budget deficit, including the states, may reach 9.4% of GDP this fiscal year, according to Morgan Stanley. Nine percent of $1 trillion is a very big number indeed.



Asian banking

Taking Wing

Jun 5th 2008 | HONG KONG
From The Economist print edition

The first big takeover by a mainland bank outside of China

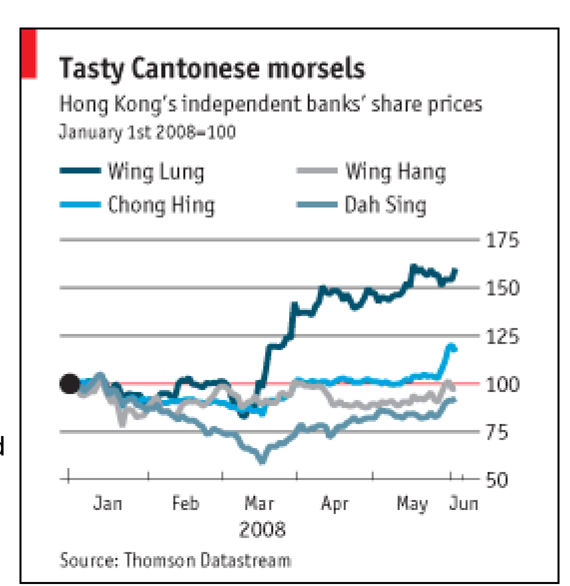
IT CAME down, in the end, to a fight between an aggressive Australian bank with a new boss who has China in his sights, and keen Chinese banks wanting a quick route to the outside world. The result reflected the new financial pecking order: China won.

In the past year Chinese banks have bought tiny foreign operations, or made minority investments in larger institutions, but on June 2nd China Merchants Bank became the first to launch a big takeover: it said it would buy Hong Kong's Wing Lung Bank for $4.7 billion. Founded in 1933, Wing Lung survived a forced relocation to Macau during the Japanese occupation, as well as many financial crises. Its strength came from strong local ties and 70 years of leadership by two brothers. One died in 2005; the other in 2008. Following that, the family squabbled and the bank went on the market.

China Merchants' logic in buying Wing Lung is sound. It is based just over the border in Shenzhen, and the two banks potentially serve a pool of the same business clients who often have factories in southern China and sales offices in Hong Kong. Dealing with a single bank would make their lives easier. As a bonus, Wing Lung comes with a branch in California that will enable China Merchants to add to the New York branch that it won permission to open only last November. Chinese companies are expanding overseas. There will be opportunities for the banks that can go with them.

The benefits were different, but equally compelling for ANZ, the losing bidder. Trade between China and Australia is growing quickly, and in April New Zealand and China signed a free-trade agreement; ANZ is expanding throughout South-East Asia. Acquiring an established bank in Hong Kong, the regional financial hub, would, by itself, have benefits. But Wing Lung also had operating licences in China that would have tempted ANZ's chief executive Michael Smith—when he was head of HSBC in Asia, he pushed the British bank deeper into the mainland.

Bidding for Wing Lung was fierce, but it could have been fiercer still. No other local Chinese-owned Hong Kong bank was allowed to put forward an offer, so as to prevent Wing Lung from losing face, says one banker who was blocked. ICBC was the only state-controlled Chinese bank to make an offer, which made the sellers a bit nervous. China Merchants Bank, which is private, decided to bid after its adviser, JPMorgan, bypassed the formal process and went directly to the selling family members. The offer, at 3.1 times book value, was high and far more than ANZ or ICBC was prepared to pay. A deal was quickly struck.



Wing Lung has seen better days. In March it declared its first loss since going public in 1980, because of bad investments tied to American subprime debt. But the lure of Hong Kong made that an irrelevance. Three other big Hong Kong banks—Wing Hang, Dah Sing, and Chong Hing—remain independent. Not surprisingly, the shares of all three are up sharply (see chart). The race to get into, and out of, China is heating up.

Legal reform and development

The law poor

Jun 5th 2008 | NEW YORK
From The Economist print edition

A new report says that legal empowerment can help end poverty

TWO in every three people on the planet—some 4 billion in total—are “excluded from the rule of law.” In many cases, this begins with the lack of official recognition of their birth: around 40% of the developing world's five-year-old children are not registered as even existing.

Later, people will find that the home they live in, the land they farm, or the business that they start, is not protected by legally enforceable property rights. Even in the rare cases when they can afford to go to court, the service is poor. India, for example, has only 11 judges for every 1m people.

These alarming statistics are contained in a report from a commission on the legal empowerment of the poor, released on June 3rd at the United Nations. It argues that not only are such statistics evidence of grave injustice, they also reflect one of the main reasons why so much of humanity remains mired in poverty. Because they are outside the rule of law, the vast majority of poor people are obliged to work (if they work at all) in the informal economy, which is less productive than the formal, legal part of the economy.

The commission was born out of the theories of Hernando de Soto, a Peruvian economist whose books, “The Other Path” and “The Mystery of Capital”, proved unexpected best-sellers—albeit controversial ones. For a long time there was such disagreement among the commission's members—ranging from Ernesto Zedillo, a former Mexican president; and Lawrence Summers, a former American treasury secretary; to Shirin Ebadi, an Iranian human-rights activist and winner of the Nobel Peace prize; and Anthony Kennedy, a justice on America's Supreme Court—that it seemed they would be incapable of producing an agreement.

Perhaps reflecting the need for compromise, the report takes a much broader view of legal empowerment than Mr de Soto's focus on property rights. These are just one of four “pillars of legal empowerment”—the others are access to justice and the rule of law, labour rights and business rights (which make it easier for poor people to start, own and pass on businesses).

Unfortunately, the report does not attempt to rank its recommendations—again, the desire for consensus may have got in the way. Nor does it suggest how to measure the progress towards legal empowerment. However, both Kemal Dervis, the head of the UN Development Programme, and Robert Zoellick, president of the World Bank, are enthusiastic about legal empowerment, so the report is likely to be taken further. Madeleine Albright, a former American Secretary of State, who chaired the commission with Mr de Soto, says she hopes that legal empowerment will now become part of policymaking jargon, much as “sustainable development” did after it first appeared in a similar report three decades ago.

Financial exams

Charter school

Jun 5th 2008
From The Economist print edition

How not to unwind after work

ON THE weekend of June 7th and 8th, up to 175,000 people round the world will face one of the most arduous tests of their lives. They will sit one of the three exams required to earn the coveted status of chartered financial analyst (CFA).

One of those candidates will become the millionth person to take the test. That is phenomenal growth for a qualification that, as recently as 1995, was taken by fewer than 20,000 people a year. This expansion partly reflects the lure of earning big money in finance (at least until the credit crisis). But it also shows the growing appeal of the CFA brand outside its American birthplace; more than two-fifths of this year's candidates come from Asia, where job ads in the *South China Morning Post* now often say “CFA-required”.

Although no profession formally requires employees to become a CFA, it is increasingly seen as essential for those trying to get ahead in financial services. Despite already working in institutional sales at Man Group, a hedge-fund firm, Lucy Johnstone, a classics graduate from Edinburgh University, is putting herself through the agony of the level III exam. It “really helps when you're talking to other finance professionals,” she says.

Unlike the well-known MBA degree, which usually requires a residential course, CFA students mostly study at home. Neo Wee Koon, a Singapore-based engineer who wants to move into fund management, says he was attracted by both the flexibility and affordability of the course; he receives a grant from his local CFA Institute to help him study.

But this structure also means candidates need a lot of self-discipline. Aelita Arampova, a recent CFA charterholder who is now chief executive of a hedge-fund group, says she studied from 8pm till midnight from three to four days a week with a further five to six hours at weekends. She decided to duck out of the programme for a year in 2006, when she faced the equally demanding task of organising her wedding.

After all that effort, there is no guarantee of success. Nitin Mehta of the CFA Institute in London says that only a fifth of the candidates who start complete all three stages; a quarter do not even turn up to the exam. Mind you, faced with questions such as “What are the desirable statistical properties of an estimator?”, they can hardly be blamed for that.

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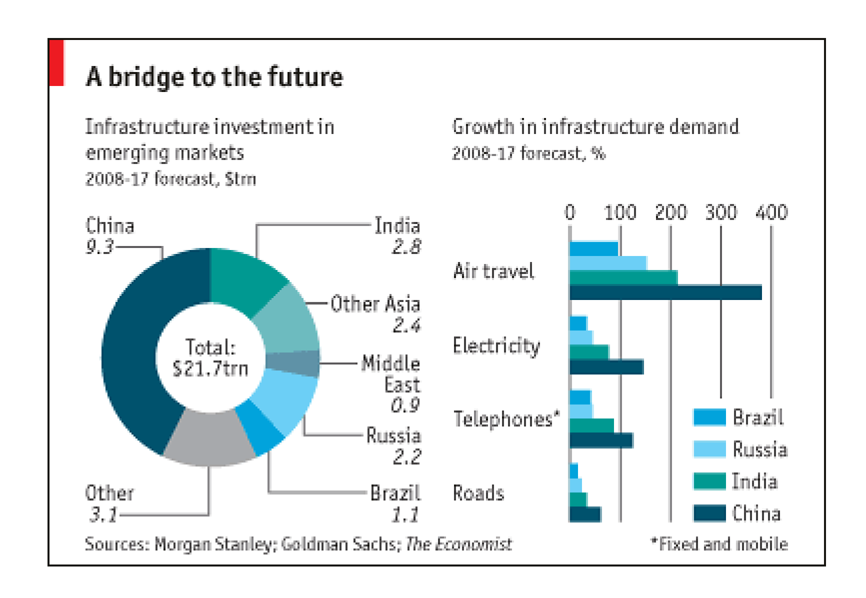
Economics focus

Building BRICs of growth

Jun 5th 2008
From The Economist print edition

Record spending on infrastructure will help to sustain rapid growth in emerging economies

THE biggest investment boom in history is under way. Over half of the world's infrastructure investment is now taking place in emerging economies, where sales of excavators have risen more than fivefold since 2000. In total, emerging economies are likely to spend an estimated $1.2 trillion on roads, railways, electricity, telecommunications and other projects this year, equivalent to 6% of their combined GDPs—twice the average infrastructure-investment ratio in developed economies. Largely as a result, total fixed investment in emerging economies could increase by a staggering 16% in real terms this year, according to HSBC, whereas in rich economies it is forecast to be flat. Such investment will help support economic growth this year as America's economy stalls—and for many years to come.



Compounding this year's figure, Morgan Stanley predicts that emerging economies will spend $22 trillion (in today's prices) on infrastructure over the next ten years, of which China will account for 43% (see left-hand chart). China is already spending around 12% of its GDP on infrastructure. Indeed, China has spent more (in real terms) in the past five years than in the whole of the 20th century. Last year Brazil launched a four-year plan to spend $300 billion to modernise its road network, power plants and ports. The Indian government's latest five-year plan has ambitiously pencilled in nearly $500 billion in infrastructure projects. Russia, the Gulf states and other oil exporters are all pouring part of their higher oil revenues into fixed investment.

Good infrastructure has always played a leading role in economic development, from the roads and aqueducts of ancient Rome to Britain's railway boom in the mid-19th century. But never before has infrastructure spending been so large as a share of world GDP. This is partly because more countries are now industrialising than ever before, but also because China and others are investing at a much brisker pace than rich economies ever did. Even at the peak of Britain's railway mania in the 1840s, total infrastructure investment was only around 5% of GDP.

Infrastructure investment can yield big economic gains. Building roads or railways immediately boosts output and jobs, but it also helps to spur future growth—provided the money is spent wisely. Better transport helps farmers to get their produce to cities, and manufacturers to export their goods overseas. Countries with the lowest transport costs tend to be more open to foreign trade and so enjoy faster growth. Clean water and sanitation also raise the quality of human capital, thereby lifting labour productivity. The World Bank estimates that a 1% increase in a country's infrastructure stock is associated with a 1% increase in the level of GDP. Other studies have concluded that East Asia's much higher investment in infrastructure explains a large part of its faster growth than Latin America.

A recent report by Goldman Sachs argues that infrastructure spending is not just a cause of economic growth, but a consequence of it. As people get richer and more of them live in towns, the demand for electricity, transport, sanitation and housing increases. This mutually reinforcing relationship leads to higher investment and growth. The bank has developed a model that uses expected growth in income, urbanisation and population to forecast future infrastructure demands.

Urbanisation has the biggest impact on electricity requirements. Goldman calculates that a 1% increase in the share of people living in cities leads to a 1.8% increase in demand for installed capacity. A 1% rise in income per head leads to a 0.5% increase in demand. Putting this together, electricity capacity may have to surge by 140% in China and by 80% in India over the next decade (see right-hand chart). Air travel—and hence airports—will see the fastest growth in demand, because it is by far the most sensitive to income: a 1% increase in income per person leads to a 1.4% increase in the number of passengers travelling by air. The number of air passengers could jump by more than 350% in China and by 200% in India over the next decade.

China's faster growth in income per head and its more rapid pace of urbanisation mean that it is likely to pull even further ahead of India on most infrastructure measures. China could add 13 times as many fixed-line phones as India over the decade, seven times as many air passengers and six times as much electricity capacity. Brazil and Russia, which are already much more urbanised and relatively richer (implying slower growth in income), will also see more modest growth in infrastructure.

A boom in fumes

How will emerging economies finance all this spending? The fiscal finances of most emerging economies are in good shape. As a group, they are close to having a balanced budget, although a few, notably India, have large deficits. Even so, the vast scale of investment will require more private-sector money. To attract that, emerging economies will need to offer investors a decent return and that will require reform of their regulatory systems and a move towards market pricing. In India only about half of all electricity generated is paid for, because power is stolen and bills are left unpaid. In turn, the financing needs of massive infrastructure investment could encourage the development of domestic bond markets, bringing additional long-term benefits.

The infrastructure boom has global implications. Increased investment means more imports of capital equipment, which will help to slim current-account surpluses in China and elsewhere, and so reduce global imbalances. Rising demand for building materials will keep commodity prices high.

Last, but not least, will be the negative impact on the environment. An expected 75% increase in emerging economies' electricity demand over the next decade will worsen air pollution and global warming. Many fear that China's Three Gorges Dam, the world's largest hydroelectric project, could cause massive environmental damage. China's national bird, the red-crowned crane, is an endangered species. Some people may wish that the construction crane was also breeding less rapidly.

Economist.com SCIENCE & TECHNOLOGY

AIDS

Getting the message

Jun 5th 2008
From The Economist print edition

Panos



Good news on treatment. Bad news on propaganda

TO EVERY action, there is an equal and opposite reaction. Newton's third law describes life as well as physics. Once it was only AIDS activists—those with the disease, or at high risk of getting it—who criticised the mandarins of the AIDS establishment. Even then, the criticisms mostly boiled down to two things: “you're not acting fast enough,” and “you're not spending enough money.”

Now, insiders, too, are queuing up to put the boot in, accusing the World Health Organisation (WHO) and UNAIDS, in particular, of sloppy methodology, of the selective presentation of data, and of kowtowing to political correctness in a way that has distorted priorities for the treatment and prevention of the disease.

Ironically, this is happening at a time when the desire of the activists—treatment for all—no longer looks like a pious hope. It may take longer than those activists would wish. And the definition of “all” may not quite be the one in the dictionary. But the treatment of AIDS is steadily improving.

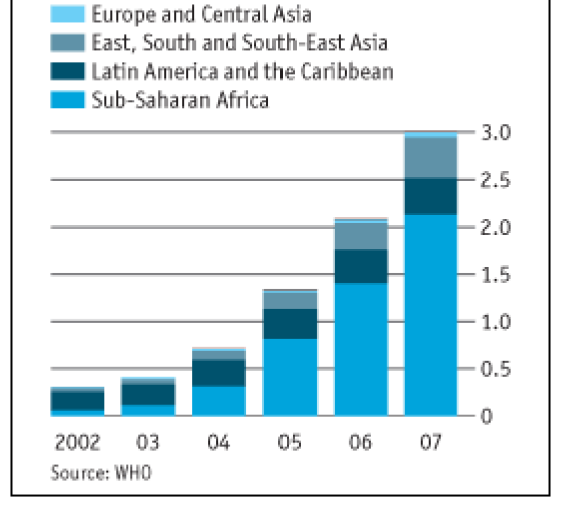
One-third full or two-thirds empty?

The latest news on treatment is contained in a report published by the WHO, UNAIDS and UNICEF, the United Nations children's fund, on June 2nd. It says that, by the end of 2007, about 3m people were receiving anti-AIDS drugs. That is a rise of 1m in a year, and is part of an accelerating trend (see chart).

This number may look woefully small in the face of an epidemic reckoned to infect 33m people, but most doctors agree that the drugs are best reserved for those whose immune systems are most in danger. That is about 10m people around the world. In other words almost a third of those who could benefit are doing so. Moreover, scepticism that the poor would not comply with the strictures of such drug programmes (in particular, the need to take the drugs regularly to prevent the evolution of resistant strains) has proved unfounded. People in poor countries comply as well as those in the rich world do.

Yet the treatment programme itself—or, rather, its financial consequence—is one of the objects of the revisionists' criticism.

Writing earlier this year in the *British Medical Journal*, Roger England of Health Systems Workshop, a health-policy charity, suggested that spending on AIDS is diverting resources from more cost-effective health interventions, and called for the abolition of UNAIDS. Dr England and those who think like him argue that because of the single-issue activism that AIDS inspires, it receives a quarter of global health aid even though it causes only 5% of the burden of disease in poor and middle-income countries. They also claim that earmarking money in this way makes it harder to strengthen the health systems of those countries. Dr England summed up his criticism thus: "The global HIV industry is too big and out of control. We have created a monster with too many vested interests and reputations at stake."



The industry's response is that a lot of the money does indeed go into medical infrastructure. A rising tide, as the saying goes, lifts all boats. That is particularly true of money directed through the Global Fund, which deals not only with AIDS, but also with tuberculosis (which kills many of those whose immune systems have been destroyed by AIDS) and malaria (which may kill more people than AIDS does). The World Bank, too, recognises the need to build medical infrastructure. Its latest policy document on the subject, published in May, also emphasises the link between treating AIDS and tuberculosis.

However, there is no plausible rejoinder to another part of the critics' observation, which is that the treatment programme is an open-ended financial commitment. Since the drugs only control AIDS, but do not cure it, they have to be taken indefinitely. Indeed, the WHO report acknowledges that 2.5m people became infected last year. At the moment, those new infections are almost balanced by 2.1m deaths. But as more people are treated, the death rate will fall. Bearing all this in mind Mead Over, of the Centre for Global Development, a think-tank in Washington, DC, calculates that American-financed spending on HIV treatment could soar to $12 billion a year by 2016, up from about $2 billion today. That amount would represent over half of America's total foreign-aid budget for all causes.

Dr England is not the only critic of the acronym-ridden world of AIDS to make his opinions known recently. Elizabeth Pisani, a journalist turned epidemiologist who worked for UNAIDS, spilled her account of spin, waste and denial in "The Wisdom of Whores", published last month (and reviewed by *The Economist* on May 3rd). Meanwhile Jim Chin, formerly an epidemiologist at the WHO, has given a more scientific account of the story in a monograph published by the International Policy Network, in London.

Both level two main accusations. First, that the agencies spent many years overcounting the number of cases. Second, that for political reasons they have failed to match their prevention policies to the epidemiological data, and have thus wasted money preaching to the wrong people.

Dr Pisani cheerfully admits to being a doctor of the spin variety herself—she refers to the process as "beating up the news". She absolves UNAIDS's researchers of any blame. They did their best to collect true numbers in difficult circumstances and with little money. But so as to rack the world's conscience, she wrote reports that put the worst possible complexion on those numbers. When new methods came in a few years ago, the stated size of the epidemic shrank sharply and it became apparent that the annual rate of new infections had peaked in the late 1990s.

Jaw jaw and war war

Every war has its propagandists and the money was for a decent cause. So a little forgiveness may be in order. But the second charge, concerning prevention, is harder to excuse. It has been known for years that HIV is hard to pass on during normal heterosexual intercourse. Only one copulation in 500-1,000 with an infected individual will do so. The risk comes with certain behaviour (anal intercourse, which risks tearing the lining of the gut; and injecting drugs using dirty needles), certain professions (prostitutes of both sexes) and certain ways of life (multiple, simultaneous lovers, rather than serial polygamy). Aiming propaganda at heterosexual teenagers is (outside the special case of Africa) a waste of money. It is, however, often an easier course than tackling drugs, whores and buggery, which many politicians would prefer to pretend have no place in their countries.

Both Dr Chin and Dr Pisani are hard on what they think was a refusal to see Africa as a special case. For years, the continent was, instead, taken as an awful warning of what might happen elsewhere. Both suggest that the disease is severe in Africa not just because this is where it started, but also because many Africans (of both sexes) have multiple, simultaneous lovers. There are married sugar-daddies with teenage girlfriends; lorry drivers and mine workers, who spend weeks or months away from home; wives whose husbands spend weeks or months away from home in lorries and mines. Africans do not have more lovers than other people in the course of their lives, but they do tend to have more at the same time. That creates networks, rather than chains, of transmission, making it easier for HIV to spread. A politically correct refusal to offend by stating that this makes a difference meant, once again, that efforts elsewhere were aimed at preventing a heterosexual epidemic that was never going to happen.

That is not, of course, quite how the WHO sees things. As Kevin De Cock, its head of AIDS, points out, if donors had been more willing to put money into the unglamorous business of counting the infected, rather than the headline-grabbing activities of treatment and prevention, then the true numbers may have emerged sooner. He also says that the uniqueness of the African epidemic has been recognised for quite a long time. Transgenerational transmission of the sugar-daddy variety, for example, was a big topic of discussion at the Durban AIDS conference eight years ago. Moreover, prevention efforts in Asia have concentrated on commercial sex almost from the beginning, even if the squeamish issue of homosexuality has taken longer to confront.

There is, nevertheless, likely to be a lot of flying mud at the next AIDS conference, in Mexico in August. Dr England's point will no doubt lead to demands for yet more money, so that all diseases may benefit as much as AIDS has. Dr Over's will raise an old spectre, one that also goes back to Durban, of the division of the spoils between treatment and prevention. At the moment, treatment has the upper hand, but prevention is becoming fashionable again—it was, for example, emphasised in the World Bank policy document. Dr Chin's and Dr Pisani's criticisms will be dismissed with an embarrassed shrug as old news from people who have books to sell, even as any changes in prevention policy resulting from such criticism are scrutinised for political incorrectness. For you may be sure that throughout it all, the thought-police will be watching for any deviation from the activists' agenda.

Cancer stem cells

On the move

Jun 5th 2008 | CHICAGO
From The Economist print edition

Organ-transplant data provide more evidence that stem cells cause cancer

DOCTORS track the long-term health of organ-transplant patients in registries. Such registries make it possible to uncover trends or long-term problems in the population that may be missed in smaller samples. But they can also be pressed into service to support basic research. And a group of researchers led by Sanford Barsky of Ohio State University College of Medicine in Columbus has done just that. As they reported on June 2nd to a meeting of the American Society of Clinical Oncology, in Chicago, they have used one such registry to support the increasingly popular idea that many if not all cancers are caused by stem cells gone bad.

Each organ and tissue in the body has its own collection of stem cells. When these cells divide, they produce two very different daughter cells. One resembles the parent stem cell and thus allows the whole process to continue. The progeny of the other differentiate into mature cells within the skin, kidney, lung or what have you. This is how organs renew themselves over the life of an individual. In a healthy organ, the stem cells divide only when needed—usually in response to injury or when other cells have died. Some cancer scientists, however, think that stem cells can lose this control function and thus divide endlessly, leading to tumours.

Dr Barsky reasoned that if the cancer stem-cell hypothesis is true, then stem cells from a donor organ may cause cancer somewhere else in a transplant recipient's body. Looking in a patient registry, he identified 280 people who had undergone an organ transplant and later developed a solid tumour. In nearly half of these cases donor and recipient were of different sexes, which means the cells from each would have different sex chromosomes (women have two X chromosomes, men an X and a Y). That makes a cancer derived from the transplant easy to identify.

To find out if the tumour cells were the same sex as the body they inhabited, Dr Barsky labelled slices of tumour with green fluorescent tags that bind to the X chromosome and red tags that bind to the Y. And he found transplant-derived cancers in abundance: in 12% of cases, the sex of the tumour matched the donor rather than the recipient. For example, a 48-year-old woman developed skin cancer nine months after receiving a bone-marrow transplant from a man. The tumour cells had a Y chromosome, indicating that the cancer arose from the donated bone marrow. In another case, a 62-year-old man developed colon cancer ten years after receiving a kidney transplant from a female donor. The colon-cancer cells lacked a Y chromosome.

Closer examination of the DNA in the tumour cells and surrounding tissue showed that the tumours definitely did originate from the donor organs, not the recipients. Dr Barsky also found that if a tumour formed in the transplanted organ, it could be derived from either recipient or donor cells.

In each of these cases, the tumour that formed resembled any other tumour that would form in that site. The 48-year-old woman's looked like skin cancer, not cancer of the bone marrow. The 62-year-old man's looked like colon cancer and not like a kidney tumour. Thus, once a cell migrated to a new site, it took on the behaviour and appearance appropriate to that location—losing the identity it had held in its organ of origin.

This observation does not absolutely prove that the migrating cells are stem cells, but it would be astonishing if fully differentiated cells from one tissue could up sticks to another organ and then take on the characteristics of that organ. Besides, biologists do know that stem cells in the bone marrow move into the blood stream. Thus the formation of donor-derived tumours in distant tissues after a bone-marrow transplant is not entirely unexpected. A few reports also exist in the medical literature of donor-derived tumours arising after a solid organ, such as a liver or a kidney, has been transplanted. Dr Barsky's data, though, show that this is not such a rare event after all. Stem cells in one organ thus seem malleable enough to adopt a whole new developmental programme in another organ, even late in a person's life.

More important, though, in Dr Barsky's opinion, is that the new data support the idea that tumours arise from stem cells that have gone wrong. It is not clear whether those stem cells are healthy when they migrate to a new site and mutate into cancer stem cells after they have taken up residence, or if they mutate first and then migrate. Either way, however, transplant registries may just have shed light on a fundamental question in cancer biology.

Regenerative medicine

Hair today, hair tomorrow

Jun 5th 2008
From The Economist print edition

A cure for baldness

THE success of Silvio Berlusconi's hair transplant, four years ago, relied on the fact that the septuagenarian prime minister had enough of a thatch on the back of his head to enable some of it to be transferred to his thinning top. Although hair transplants have advanced to the stage where they are virtually undetectable (no more plugs of hair), they still rely on moving hairs from one place to another. So, though hairlines such as Mr Berlusconi's can be thickened up, or even straightened, there may well not be enough material available to lower a hairline to its former, youthful level.

AP




La bella figura

Finite supply remains the main drawback of this sort of transplant surgery. The most common form of hair loss in men is “male pattern baldness”, characterised by a receding hairline and the thinning of the hair on the crown. It is caused by hormones and mediated by genetic predisposition. Hair transplants work because the hairs at the back of a man's head are not vulnerable to hormonal attack, and will thus grow quite contentedly in their new home—assuming there are enough of them to transplant.

For those so follicularly challenged that they have little hair to move around in this way, however, there is now hope. This comes not in a jar, but in a test-tube from a Manchester-based company called Intercytex. The firm's technique exploits the regenerative properties of what are known as dermal papilla cells. These are the cells that create hair follicles in the first place. They remain at the base of the hair when they have finished their job.

Some years ago it was discovered that when these cells are relocated, an entirely new hair will grow. That observation is only useful, though, if you can multiply dermal papilla cells—and do so in a way that allows them to keep their ability to induce hair growth. For, in normal culture, dermal papilla cells quickly lose this sought-after ability.

This, says Nick Higgins, Intercytex's boss, has taxed scientists for years. Intercytex appears to be working on two solutions. Although it is understandably tight-lipped about the exact mechanism behind its success, one probably enlists the help of cells called keratinocytes, which interact naturally with the dermal papilla cells of the hair follicle and secrete a chemical factor that supports their growth. At present, the identity of this growth factor is a mystery. However, it is likely that one of Intercytex's methods involves supplying this factor to cultured dermal papilla cells. Intercytex's second approach seems to involve culturing the dermal papilla cells with proteins that take part in signalling during the process that creates hair.

The long and short of it is that being able to multiply these cells while preserving their efficacy opens the way for unlimited supplies of head hair. Intercytex is therefore conducting a trial of the technology in

Manchester. Nineteen “patients” have had a small amount of hair removed, follicles and all, from the backs of their heads. Their dermal papilla cells have been extracted, multiplied and re-injected into their scalps. The trial's full results will not be available until March 2009, but the company has already said that at least two-thirds of its patients have generated new hair within six months.

Unfortunately for eager baldies, regulations require more trials. As a result it is likely to be five years before any product is on the market. Nor will Intercytex's technique do anything about that other bane of ageing, the tendency of hair to go grey. For the time being, even Mr Berlusconi will have to continue to dye his locks.

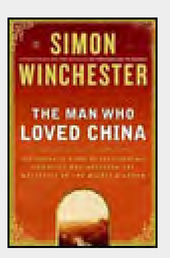
Chinese invention

Question marks

Jun 5th 2008
From The Economist print edition

Why did China's scientific innovation, once so advanced, suddenly collapse? A British academic made this question his life's work

The Man Who Loved China: The Fantastic Story of the Eccentric Scientist Who Unlocked the Mysteries of the Middle Kingdom
By Simon Winchester



Harper Collins; 336 pages; $27.95. To be published in Britain as "Bomb, Book and Compass: Joseph Needham and the Great Secrets of China" by Viking in September

Corbis



FEW people, other than scholars, will be familiar with the story of the Cambridge don whose study of China's scientific history helped to change the West's appraisal of a civilisation once thought hopelessly backward. By the time Joseph Needham died in 1995, he had published 17 volumes of his "Science and Civilisation in China" series, including several that he wrote entirely on his own.

The Chinese began printing 600 years before Johannes Gutenberg introduced the technique in Germany. They built the first chain drive 700 years before the Europeans. And they made use of a magnetic compass at least a century before the first reference to it appeared elsewhere. So why, in the middle of the 15th century, did this advanced civilisation suddenly cease its spectacular progress?

So powerful has Needham's contribution been to the historiography of Chinese science that this conundrum is still known as "The Needham Question". Even the Chinese themselves use it: the phrase in Mandarin is *Li Yuese nanti*.

Simon Winchester's lively biography (see article) focuses on what drove Needham to wrestle with this issue. In 1936 three Chinese assistants came to work in his biochemistry laboratory. One, Lu Gwei-djen, who came from Nanjing, began teaching him Chinese, which ignited Needham's interest in the country's technological and scientific past. He retrained as a Sinologist and took a job in Chongqing as Britain's scientific emissary.

Mr Winchester draws much from Needham's diaries which describe an unconventional lifestyle, an open marriage and numerous extra-marital affairs, as well as exotic adventures travelling across China in search of its science.

Among Needham's destinations in his Chevrolet truck was Dujiangyan, a city badly hit by the recent earthquake in Sichuan Province. There he was able to study a huge irrigation project that was created 2,300 years ago and which still stands today, though now cracked by the earthquake. At that time, only the Mesopotamians had made such strides in controlling their rivers, Mr Winchester says.

Needham's focus on China's achievements naturally won him praise there. The Republican government granted him one of its highest honours shortly before it was overthrown by the Communist Party in 1949. But Needham also had strong ties with China's new rulers. This controversial relationship threatened to blight his career. His participation in a Chinese-led inquiry into alleged American use of germ warfare during the Korean war, together with his failure to be more sceptical about what many believe to have been Soviet and Chinese fakery, prompted many of his peers in the West to shun him.

Needham's Cambridge college, Gonville and Caius, however, retained its faith in his scholarship and gave him extraordinary freedom from normal academic duties to pursue his book-writing.

Needham never fully worked out why China's inventiveness dried up. Other academics have made their own suggestions: the stultifying pursuit of bureaucratic rank in the Middle Kingdom and the absence of a mercantile class to foster competition and self-improvement; the sheer size of China compared with the smaller states of Europe whose fierce rivalries fostered technological competition; its totalitarianism.

With its unreformed one-party system, its rote-learning in schools and state control of big businesses, "new China" is hardly a haven for innovative thinking. Yet the Chinese continue to fret about the Needham question. A Communist Party chief of a middle school in central China recently said that it deserved deep thought and that the answer lay in an education system that fails to emphasise improving "character". A former government minister also referred to Needham's lament that China had produced no idea or invention of global impact for more than 500 years. Its contribution henceforth, the official said, should be "harmony".

Work on "Science and Civilisation in China" has pressed on since Needham's death. A variety of authors continue to contribute on topics that stretch from mining to agro-industries and forestry. The latest, out this year, is part 11 of volume five. Each part is a book, in this case a 512-page tome on ferrous metallurgy by Donald B. Wagner, the 24th book in the series.

The Man Who Loved China: The Fantastic Story of the Eccentric Scientist Who Unlocked the Mysteries of the Middle Kingdom.
By Simon Winchester.
Harper Collins; 336 pages; $27.95. To be published in Britain as "Bomb, Book and Compass: Joseph Needham and the Great Secrets of China" by Viking in September

New crime fiction

China syndrome

Jun 5th 2008
From The Economist print edition

Mesmerising and mysterious, China is the perfect backdrop for thrillers

FOR crime writers, China is the new Soviet Union: a vast, opaque empire, rich in resources and locked in political and economic battle with the West.

Charles Cumming trained as a spy with MI6, one of Britain's intelligence services, which serves him well as a writer. In his fourth book, "Typhoon", Western agencies are arming Islamic militant cells to foment an uprising in Xinjiang, in western China. Joe Lennox is an MI6 agent with ideals and a heart, a dangerous combination for a spy. Miles Coolidge, his friend and rival in the CIA, is a sex addict, sniffing cocaine off the stomachs of Chinese prostitutes. Their mutual love interest, Isabella Aubert, is an evocative French temptress.

Mr Cumming is sharp on the new China's bizarre fusion of wild-west capitalism and authoritarian communism. "Typhoon" has a complex plot, but it is well-structured, and the descriptions of Shanghai are especially vivid.

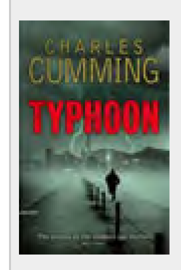
Colin Harrison is a master of the New York urban noir thriller. Jin Li, a young Chinese woman, takes a drive with two Mexican friends. She is saved from a truly stomach-churning death when she answers a call of nature behind a bush. Then she gets caught up in a murderous conspiracy that reaches from Beijing to Wall Street.

"The Finder" is a fast-paced chase thriller with a twist. Mr Harrison's previous works include "Manhattan Nocturne", a vivid portrait of 1990s New York awash with money. Here too his atmospheric scene-setting makes the city itself into a character, from billionaires' penthouses to dark, deserted warehouses on Manhattan's outer edges. Some familiar themes reappear: the inevitability of bodily decay, and the ravages of age; marathon sessions of life-affirming sex; and the murky world of international high finance. Most of all, there is the power of love and loyalty. A vivid backdrop and intelligent storyline, laced with a visceral physicality, make "The Finder" a masterly read.

Alex Berenson, a reporter with the *New York Times*, won the Edgar award for best first novel for "The Faithful Spy", his 2006 debut. "The Ghost War" is a second outing for his hero, John Wells, a CIA agent and the only American to have infiltrated al-Qaeda. With his physical wounds healed, but his mental scars still raw, Wells is sent to Afghanistan to investigate why the Taliban has suddenly improved its military tactics. But greater forces are at play than newly efficient Islamic fighters: an American mission to North Korea ends in bloody catastrophe; the head of China's army is launching a deadly game of international brinkmanship in the corridors of Zhongnanhai, China's Kremlin; and a dormant mole in the CIA is about to become active.

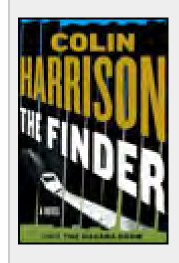
Mr Berenson has an eye for detail and a solid grasp of international intrigue and policymaking. "The Ghost War" is carefully plotted, moving from Washington, DC, to the caves of Afghanistan, and also involving high politics in Beijing and Iran. But its pace and structure fail to compensate for Mr Berenson's shallow protagonist. The damaged-but-fearless-tough-guy archetype feels tired and unoriginal. Putting as much effort into creating rounded characters, as well as a fine plot, would surely have made "The Ghost War" into more than just another

Typhoon
By Charles Cumming



Michael Joseph; 464 pages; £18.99

The Finder
By Colin Harrison



Farrar, Straus and Giroux; 336 pages; $25. Bloomsbury; £10.99

The Ghost War
By Alex Berenson



Putnam Adult; 400 pages; $24.95. Published in Britain as "The Ghost Agent"; Hutchinson; £10

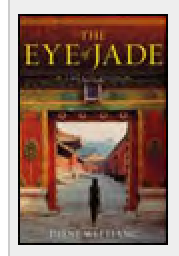
The Eye of Jade: A

entertaining read.

"The Eye of Jade", which came out in Britain in 2007 and in America earlier this year, features Mei Wang, the first female private eye in Beijing. She drinks Oolong tea rather than whisky, and has a diligent male assistant. Like the best fictional private eyes, Mei Wang operates on the margins of legality. Her hunt for a stolen jade seal that disappeared during the chaos of the Cultural Revolution takes the reader through smoky mah-jong parlours and the lavish apartments of the new rich.

Beijing is described in taut, limpid, prose. So is Mei Wang's longing for the father who vanished in the Chinese gulag. But knowledge can be a burden too, as Mei Wang discovers when she unearth the terrible choice her mother was forced to make during the Cultural Revolution. "The Eye of Jade" is a moving and promising debut. China is rising, and so is the quality and quantity of crime writing it inspires.

Mei Wang Mystery
By Diane Wei Liang



Simon & Schuster; 272 pages; $24. Picador; £7.99

Buy it at
Amazon.com
Amazon.co.uk

Typhoon.
By Charles Cumming.
Michael Joseph; 464 pages; £18.99

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By Colin Harrison.
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Chinese takeaway

Jun 5th 2008
From The Economist print edition

Three things interest Westerners about China: food, fertility and finance

“THE China Study” is the world’s biggest-selling book about all things Chinese because it touches on two American obsessions. The first is that you will only live longer if you are able to reduce the risk of suffering a heart attack, diabetes and cancer. The second is that there exists a conspiracy of powerful lobbies, government entities and opportunistic scientists who must be overcome. The Campbells, father and son, are there to show how to achieve both.

“After a long career in research and policymaking,” says Colin Campbell, the elder of the two authors, “I have decided to step ‘out of the system.’ I have decided to disclose why Americans are so confused. As a taxpayer who foots the bill for research and health policy in America, you deserve to know that many of the common notions you have been told about food, health and disease are wrong.”

So who is right? The answer is the Chinese. Thomas Jefferson advised Americans that meat should be treated as a condiment for vegetables. Jefferson, like China, is now in fashion. In a nutshell: “Eat food. Not too much. Mostly plants.”

Bestselling books about China

1. The China Study: The Most Comprehensive Study of Nutrition Ever Conducted
by T. Colin Campbell and Thomas M. Campbell

2. The Man Who Loved China: The Fantastic Story of the Eccentric Scientists Who Unlocked the Mysteries of the Middle Kingdom
by Simon Winchester

3. A Bull in China: Investing Profitability in the World's Greatest Market
by Jim Rogers

4. The Tao of Fertility
by Daoshing Ni and Dana Herko

5. The Heavenly Man: The Remarkable True Story of Chinese Christian Brother Yun
by Brother Yun and Paul Hattaway

6. China (Lonely Planet Guide)
by Damien Harper

7. Wild Swans: Three Daughters of China

by Jung Chang

Click to buy from Amazon.com or Amazon.co.uk

8. The Infertility Cure
by Randine Lewis

Click to buy from Amazon.com or Amazon.co.uk

9. The Fortune Cookie Chronicles
by Jennifer 8. Lee

Click to buy from Amazon.com or Amazon.co.uk

10. China Fireworks: How to Make Dramatic Wealth from the Fastest-Growing Economy in the World
by Robert Hsu

Click to buy from Amazon.com or Amazon.co.uk

Economist.com BOOKS & ARTS

British political memoirs

Unhappy endings

Jun 5th 2008
From The Economist print edition

With rare exceptions, politicians should not throw stones—or write memoirs

SAMUEL SMILES, a celebrated author of early self-help books, would approve of this trio of well-publicised autobiographies. Their authors, all from poor families, fought their way out of their own particular ghettos. All three played “a walk-on part in history”, as Cherie Blair puts it, and a lot of good it did them. As a consequence of newspaper serialisations and leaks, all three have been callously ridiculed. They have become victims of a kind, and the insecurities they carried into adult life have been nourished. These are sad stories.

Lord Levy was the son of the *shammas* in the local Orthodox synagogue, himself the son of a Polish immigrant, who lived in contented poverty. There was no chance that the clever boy, Michael, would go to university. John Prescott was the son of a railwayman who was an active trade unionist. He failed the 11-plus and when he left secondary school at 15, the headmaster told his mother that he would never amount to much. He became a steward on ocean liners sailing out of Liverpool. Mrs Blair’s father was a well-known Liverpudlian actor called Tony Booth, a boozer who abandoned his family before Mrs Blair was ten years old.

AP

Because you’re worth it

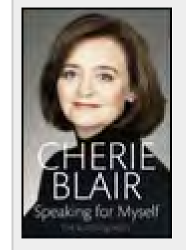
She had a strict Catholic education. The nuns identified her as an ill-disciplined child who would never make prefect, never mind head girl, but she was clever and independent-minded. She chose to study law at the London School of Economics, where she was able to shower every day in her student residence instead of sharing a bath with the rest of her family once a week.

Lord Levy and Mr Prescott freely admit to having a chip on their shoulders, and a streak of vanity which drove them on. Mr Prescott became an MP sponsored by the National Union of Seamen, rising to become Labour’s leading class warrior, and deputy prime minister. Lord Levy, who started a record label (his star performer was Alvin Stardust) and became rich when he sold it, was a celebrated fund-raiser for Jewish charities. He performed the same role for Tony Blair so successfully that he became known as Lord Cashpoint.

Mrs Blair became a QC, and the story of her legal career is rather more interesting than her score-settling account of life as the prime minister’s wife. She was a junior in the chambers of the future Lord Chancellor, Derry Irvine, and watched him in combat with Tom Bingham, later Lord Chief Justice. “Derry was like an attacking rhinoceros. Tom Bingham on the other hand was like a snake, smooth, charming, almost hypnotic, exposing the weakness in the other side’s argument without ever raising his voice. Bingham subsequently became my role model. As a woman I could never have been as aggressive an advocate as Derry.”

Where did it all go wrong? Mr Prescott felt deeply that he was unappreciated: “I

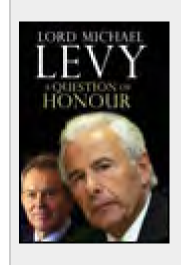
Speaking for Myself: The Autobiography
By Cherie Blair



Little, Brown; 421 pages; £18.99. To be published in America by Little, Brown in October

Buy it at
Amazon.co.uk

A Question of Honour: Inside New Labour and the True Story of the Cash for Peerages Scandal
By Michael Levy



Scribner; 320 pages; $30. Simon & Schuster; £18.99

Buy it at
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Prezza—My Story: Pulling No Punches
By John Prescott



got branded as an uneducated yob. It was an image I suppose never left me. I began to hate the press." He developed bulimia, caused in part, he says, by stress. An affair with his diary secretary tore at the last vestiges of his authority. His book, which is a lazy, once-over-lightly non-apology of a life, does not restore it.

Headline Review; 405 pages; £18.99

Buy it at Amazon.co.uk

Lord Levy comes across as a more sympathetic character. He has written the case for his defence in the recent cash-for-honours scandal that involved even Mr Blair. As a vain man, he was particularly proud of his role as Mr Blair's Middle East envoy, but he acknowledges that he suffered from hubris. "I sometimes revelled in the public attention. In politics I had sometimes been blinded by the light."

Mrs Blair's problem is that she could never keep quiet: "I have never been taught the meaning of the phrase 'discretion is the better part of valour'." She is a doughty hater, with Gordon Brown as her principal antagonist, and Alistair Campbell and the Princesses Margaret and Anne not far behind. Her loyalty to Mr Blair is absolute: "There were times when I faltered...But I knew him and knew he would never do the wrong thing." Her book is easily outselling the others, and deserves to, but each leads irresistibly to the same conclusion: there are very few happy endings in British politics.

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European cathedrals

Hallowed stones

Jun 5th 2008
From The Economist print edition

NOTHING seems more remote from 12th-century French Gothic than 17th-century English Baroque. The cathedrals of Chartres in France and St Paul's in London embody not only different aesthetics, but different versions of God and Man—one all shadowy ineffability, the other all daylight rationalism. There is also much that they share. It is not just that these buildings were, at least in part, monuments to national ambition, underpinned by urban, mercantile wealth. It is also, as two new books show, that Chartres and St Paul's were part of the same philosophical conversation, though at different points along its continuum—about intellectual freedom versus authority, about reason and faith.

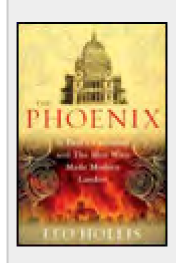
Universe of Stone: Charles Cathedral and the Triumph of the Modern Mind
By Philip Ball



Bodley Head; 322 pages; £20. To be published in America by Harper in July

Buy it at
Amazon.co.uk

The Phoenix: St Paul's Cathedral and the Men Who Made Modern London
By Leo Hollis



Weidenfield & Nicolson; 390 pages; £20

Buy it at
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Each book roots its cathedral in the political, economic and philosophical discourses of its period. Philip Ball's perspective is longer. His period looked back, after all—to the tenth-century Holy Roman Empire of Charlemagne, and further, to the early Christians and the ancients before them. Leo Hollis's period is about not looking back. Having lived through the English civil wars, his men were suspicious of the extremes and intolerance of religious and intellectual authority. They wanted to start again with nothing but their reason and a *tabula rasa*—or clean slate.

The Royal Society was the embodiment of this philosophy. Founded in 1660 by Christopher Wren, an astronomer and architect, who, with Robert Hooke and other polymath-scientists, vowed "to improve knowledge of natural things...not meddling with Divinity [and] Metaphysics." This was not entirely new. Certain medieval scholars had already got there—Adelard of Bath, for example, who believed that Nature could be studied without recourse to its first cause, God. The difference was that the Royal Society received Charles II's blessing, while the scholastics, as they were called, were damned for denying the essential unknowableness of God and his creation.

Chartres cathedral belonged to the scholastics, so that historians have interpreted the extraordinary clarity of its soaring spaces, divided and subdivided with geometrical symmetry, as the expression of reason in the service of faith. Mr Ball is wary of easy conclusions, but he is clear that the images of Plato, Euclid and Pythagoras that adorn the entrance are not there to symbolise unknowability.

And what of the anonymous craftsmen? Much of the book is about their practical problems—thrust lines, the catenary curve and groin vaulting. The chapter on the windows whose intense dark blues and reds were meant not to admit light but to spiritualise it, brings the reader closest to the strange line they straddled between the material and the immaterial.

There is little, by contrast, that Mr Hollis does not know about his characters. His book is a tour de force of biography, history, politics, philosophy and experimental science. He concentrates on four Royal Society members—Wren, Hooke, John Evelyn, a diarist and horticulturalist, John Locke, a philosopher—and on Nicholas Barbon, a property speculator whose methods of buying, building, leasing and selling gave London its distinctive terraced house pattern.

The time seemed made for blank slates. The Restoration itself was a new start. London's fire of 1666 forced another. The 1688 political settlement made such a clean break that it was, according to one

observer, like “melting [the Government] down and make it all new”. With huge skill, Mr Hollis weaves his characters through this thickly detailed scene. As London grew and trade prospered, they threw themselves into the great project, building, surveying, measuring, data-collecting—in a frenzy of empiricism.

Meanwhile, in spite of wrangling committees and money shortages, St Paul’s rose, with Wren holding fast, as they had at Chartres, to Plato and geometry. His cathedral was also the repository of England’s nationhood—the “Glory of London” and the “Glory of the Isle”, as one poet wrote on its completion in 1708. As for God, Wren gave him no shadows. His glass was unstained. Churches, he thought, should be designed for seeing and hearing—no dimness, no murmuring.

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Defeating terrorism

Shoot from the hip

Jun 5th 2008
From The Economist print edition

MOST terrorists are amateurs. Al-Qaeda is overrated. The "war on terror" is not the third world war. Michael Sheehan's conclusions, expressed in the plain words of a former soldier, will not win literary prizes or universal assent. But the depth and breadth of his experience give him an authority that is hard to assail.

Crush the Cell: How to Defeat Terrorism Without Terrorizing Ourselves
By Michael A. Sheehan

Crown; 320 pages; $24.95

Mr Sheehan won a Green Beret serving with American Special Forces, commanded a hostage-rescue unit in Panama and worked at the United Nations on peacekeeping and at America's National Security Council. More recently, he helped create New York City's highly regarded counter-terrorism department.

The author draws freely on all these experiences as he tries to demystify the challenges America has faced since September 2001. Mr Sheehan has worked in the jungles of El Salvador, on the border of North and South Korea and on the streets of Manhattan where, with a team of policemen, analysts and informants, he spent three years striving to guard the city against another terrorist attack.

It would be hard to accuse someone with this background of innocence or complacency. Mr Sheehan has struggled to understand the ideology which animates the global *jihad* and to draw practical lessons from the attacks in New York, Bali, Istanbul, Madrid and London.

He has reached two stark conclusions: "We underestimated al-Qaeda's capabilities before 9/11 and overestimated them after." The first is scarcely contentious; the second fiercely so. Mr Sheehan argues his case doggedly. Politicians and pundits are too prone, he says, to stress the jihadists' capabilities rather than their limitations. These are not the supermen of media hype. Moreover, America's efforts to protect itself over the past seven years have paid off. Al-Qaeda has not given up trying. But if there is another attack on American soil, it "will be much less horrific than that of September 11th, 2001".

Mr Sheehan's criticisms are trenchant. The Department of Homeland Security is a cumbersome bureaucratic monster. Created to co-ordinate America's counter-terrorism effort, it has singularly failed to do so. Mr Sheehan worries that over-reaction to a serious attack plays right into the terrorists' hands; the psychological impact of the attack on the twin towers was far greater than the material damage.

It is not hard to find flaws in his book. General Zia was Pakistan's president, not its prime minister, and there is no such place as Wajiristan. The writing often rambles and its in-your-face tone may not appeal to everyone. Do not let that put you off. It can be salutary to shoot from the hip and Mr Sheehan scores some palpable hits.

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PEOPLE
OBITUARY

Yves Saint Laurent

Jun 5th 2008
From The Economist print edition

Camera Press



Yves Saint Laurent, couturier, died on June 1st, aged 71

THE first intimation, apparently, was when three-year-old Yves told his mother that her shoes did not go with her dress. They were at home in Oran, a dull commercial town in French-ruled Algeria, where Yves's father sold insurance and ran a chain of cinemas, and Mrs Mathieu-Saint-Laurent cut an elegant figure in colonial society. Oran had once enjoyed some small renown as the westernmost outpost of the Ottoman empire, and was to gain more later as the setting for Albert Camus's “The Plague”. But after 1936 it had a genius in the making.

So, at any rate, the tribute-payers are saying. “Pure genius”, “the world's greatest fashion designer”, “the most important designer of the 20th century”: such superlatives have been lavished on Yves Saint Laurent (he wisely got rid of the Mathieu) for years, and perhaps they are not meant to be taken at face value. The fashion business is, after all, a part of the entertainment industry, where sycophancy, exaggeration and gushing insincerity are not unknown. Mr Saint Laurent fitted perfectly into it.

He was, for a start, quite literally a showman, a shy and stage-frightened one, but what shows he could put on! Dazzling girls strutted down the catwalk, wearing startling creations of gauze, or velvet, or feathers, or not much at all. He was a celebrity, whose circle included Lauren Bacall, Maria Callas, Rudolf Nureyev, Paloma Picasso, Gettys, Jaggers, Rothschilds and, from almost first to last, Catherine Deneuve. He was an artist, a delicate, attenuated figure who drew his inspiration from the pages of Marcel Proust, the paintings of Braque, Matisse, Picasso and van Gogh, and the counsels of his assistant, Loulou de la Falaise. And he was troubled: by drink, by drugs and by physical frailty. He teetered perpetually on the brink of emotional collapse and sometimes fell over it; his lover, Pierre Bergé, said he had been born with a nervous breakdown.

The great liberator

In 1961, when Mr Saint Laurent set up shop in Paris under his own name, most couturiers were not quite like this. But the times were propitious for something new. He had by then done a stint at the House of Dior, whose reputation he had restored with some dramatic designs and, in 1958, after the famous founder had died, an iconoclastic collection of his own. The summons to do military service, a ghastly mental dégringolade and dismissal from Dior then intervened, and might have cut short a great career had he not gone into partnership with Mr Bergé. As it was, a series of innovations followed, with Mr Saint Laurent responsible for the designs, Mr Bergé for the business, including the scents, scarves, unguents and over 100 other products marketed with a YSL label.

The dress designs now started flying off Mr Saint Laurent's drawing board, though increasingly often with

the aid of helpers. Many were short-lived, this being fashion and fashion being, by definition, ephemeral (not for nothing does *à la mode* mean "with ice cream" in America). But two departures were to last. One was that *haute couture*, hitherto available only to the very rich or vicariously through magazines and newspapers, should be sold worldwide in ready-to-wear shops at a fraction of the posh price. The other was that women should be put into men's clothes—safari outfits, smoking jackets, trench coats and, most enduringly, trouser suits. Women, for some reason, saw this as liberation.

Mr Saint Laurent's young models looked pretty good in his designs, but they would have looked good in anything; older women in the same outfits sometimes seemed more like mutton dressed as ram. He did not confine himself to androgynous clothing, though: he also favoured diaphanous blouses worn without underwear, a fashion that has supposedly returned this year, though most busts still seem to be encased in polystyrene.

He was always imaginative, taking inspiration not just from artists like Mondrian but also from Africa and Russian ballet. He was also capable of creating the absurd, producing, for example, a dress with conical bosoms more likely to impale than to support. But his clothes, however outré, were usually redeemed by wonderful colours and exquisite tailoring. Above all, they were stylish, and the best have certainly stood the test of time.

That is no doubt because most were unusually wearable, even comfortable. At a reverential extravaganza in (and outside) the Pompidou Centre in Paris in 2002, soon after Mr Saint Laurent had announced his retirement, many of the guests wore a lovingly preserved YSL garment. The "anarchist", as Mr Bergé recently called him, had by now become more conservative, seeing the merits of "timeless classics" and lamenting the banishment of "elegance and beauty" in fashion. He believed, he said, in "the silence of clothing".

Yet perhaps he must take some of the blame for the new cacophony. The trouser suit prepared the way for the off-track track suit; and lesser designers, believing they share his flair and originality, now think they have a licence to make clothes that are merely idiotic. Perhaps it would have happened without him. In an industry largely devoid of any sense of the ridiculous, he was usually an exception. He believed in beauty, recognised it in women and, amid the meretricious, created his share of it.



Overview

Jun 5th 2008
From The Economist print edition

The prices of **oil** and **gold** fell and the **dollar** rallied after Ben Bernanke acknowledged on June 3rd that dollar weakness had caused higher inflation and risked raising inflation expectations. The chairman of the Federal Reserve said that he expected the dollar to remain a “strong and stable currency”. The markets interpreted his unusual remarks as a signal that America's central bank does not want further dollar weakening.

The **dollar** got another fillip on June 4th when the non-manufacturing index compiled by America's Institute for Supply Management, though down a bit in May from its level in April, was stronger than expected.

Retail sales in the **euro area** fell by 0.6% in April compared with March. The decline in spending is another reason to expect that GDP growth in the second quarter will slow markedly from the strong 0.8% increase in the first three months of the year.

Inflation picked up in several developing countries. In Turkey consumer prices rose by 10.7% in the year to May, up from 9.7% in April. Inflation in Thailand jumped from 6.2% in April to 7.6% in May, close to a ten-year high. And in Indonesia inflation rose from 9.0% in April to 10.4% in May.

The outlook for inflation has worsened in most of the 13 rich countries covered by *The Economist*'s monthly **poll of forecasters**. Consumer prices are now expected to increase this year by 3.8% in America, 3.1% in the euro area and 3.0% in Britain—each higher than the panel predicted in May.



Output, prices and jobs

Jun 5th 2008
From The Economist print edition

Output, prices and jobs

% change on year ago

	Gross domestic product				Industrial production	Consumer prices			Unemployment
	latest	qtr*	2008†	2009†	latest	latest	year ago	2008†	rate‡, %
United States	+2.5 Q1	+0.9	+1.2	+1.5	+0.2 Apr	+3.9 Apr	+2.6	+3.8	5.0 Apr
Japan	+1.0 Q1	+3.3	+1.3	+1.4	+1.8 Apr	+0.8 Apr	nil	+1.1	4.0 Apr
China	+10.6 Q1	na	+9.6	+9.0	+15.7 Apr	+8.5 Apr	+3.0	+5.9	9.5 2007
Britain	+2.5 Q1	+1.6	+1.7	+1.4	+0.2 Mar	+3.0 Apr§	+2.8	+3.0	5.2 Mar††
Canada	+1.7 Q1	–0.3	+1.4	+2.1	–4.8 Mar	+1.7 Apr	+2.2	+1.8	6.1 Apr
Euro area	+2.2 Q1	+3.2	+1.7	+1.5	+2.0 Mar	+3.6 May	+1.9	+3.1	7.1 Apr
Austria	+3.5 Q1	+3.2	+2.4	+2.2	–1.1 Mar	+3.3 Apr	+1.8	+2.6	4.1 Mar
Belgium	+2.1 Q1	+1.6	+1.7	+1.7	+5.7 Feb	+5.2 May	+1.3	+3.0	10.3 Apr‡‡
France	+2.2 Q1	+2.6	+1.7	+1.5	+1.0 Mar	+3.0 Apr	+1.3	+2.9	7.2 Q1
Germany	+1.8 Q1	+6.1	+1.9	+1.6	+4.6 Mar	+3.0 May	+2.1	+2.7	7.9 May
Greece	+3.6 Q1	+4.5	+2.8	+3.0	–5.4 Mar	+4.4 Apr	+2.5	+3.9	8.0 Feb
Italy	+0.2 Q1	+1.6	+0.6	+1.1	–2.5 Mar	+3.6 May	+1.5	+2.9	6.0 Q4
Netherlands	+3.1 Q1	+1.0	+2.6	+2.0	–0.6 Mar	+2.3 May	+1.8	+2.3	4.0 Apr††
Spain	+2.7 Q1	+1.2	+2.1	+1.8	+11.3 Apr	+4.7 May	+2.3	+3.8	9.6 Apr
Czech Republic	+5.4 Q1	na	+4.7	+5.4	–2.1 Mar	+6.8 Apr	+2.5	+6.3	5.2 Apr
Denmark	+1.9 Q4	+1.2	+1.5	+1.7	–2.5 Mar	+3.2 Apr	+1.7	+3.0	1.8 Apr
Hungary	+1.6 Q1	+1.2	+2.3	+3.4	+6.7 Apr	+6.6 Apr	+8.8	+5.9	7.7 Apr††
Norway	+0.9 Q1	+0.8	+2.9	+2.5	+4.0 Mar	+3.1 Apr	+0.3	+3.4	2.4 Mar***
Poland	+6.1 Q1	na	+5.1	+4.3	+14.9 Apr	+4.0 Apr	+2.3	+4.2	10.5 Apr‡‡
Russia	+8.0 Q1	na	+7.1	+6.2	+9.2 Apr	+15.1 May	+7.8	+13.0	6.6 Apr‡‡
Sweden	+2.2 Q1	+1.6	+2.3	+2.1	+0.8 Mar	+3.4 Apr	+1.9	+3.0	6.0 Apr‡‡
Switzerland	+3.1 Q1	+1.3	+2.1	+1.7	+9.1 Q4	+2.9 May	+0.5	+2.0	2.6 Apr
Turkey	+3.4 Q4	na	+3.2	+4.1	+2.4 Mar	+10.7 May	+9.2	+10.2	11.6 Q1‡‡
Australia	+3.6 nil	+2.5	+2.9	+3.0	+0.1 Q4	+4.2 Q1	+2.4	+3.6	4.2 Apr
Hong Kong	+6.8 Q1	+7.4	+4.6	+4.5	–0.3 Q4	+5.4 Apr	+1.3	+5.3	3.3 Apr††
India	+8.8 Q1	na	+7.6	+7.1	+3.0 Mar	+7.9 Mar	+6.7	+6.0	7.2 2007
Indonesia	+6.3 Q1	na	+5.7	+5.9	+1.4 Mar	+10.4 May	+6.0	+9.0	9.1 Dec
Malaysia	+7.1 Q1	na	+5.8	+5.8	+3.0 Mar	+3.0 Apr	+1.5	+2.8	3.0 Q4
Pakistan	+7.0 2007**	na	+4.6	+5.1	+3.2 Mar	+17.2 Apr	+6.9	+12.1	6.2 2006
Singapore	+6.7 Q1	+14.6	+4.5	+5.0	–5.7 Apr	+7.5 Apr	+0.6	+4.3	2.0 Q1
South Korea	+5.8 Q1	+3.3	+4.5	+4.3	+10.5 Apr	+4.9 May	+2.3	+2.9	3.2 Apr
Taiwan	+6.1 Q1	na	+4.3	+4.4	+9.6 Apr	+3.7 May	nil	+2.6	3.9 Apr
Thailand	+6.0 Q1	+5.9	+4.8	+4.6	+10.1 Apr	+7.6 May	+1.9	+6.2	1.5 Feb
Argentina	+9.1 Q4	+8.0	+6.3	+4.5	+8.6 Apr	+8.9 Apr	+8.9	+10.3	8.4 Q1‡‡
Brazil	+6.2 Q4	+6.6	+4.6	+3.8	+1.2 Mar	+5.0 Apr	+3.0	+5.2	8.5 Apr‡‡
Chile	+4.0 Q4	+3.7	+3.8	+4.2	+4.4 Apr	+8.3 Apr	+2.5	+6.7	7.6 Apr††‡‡
Colombia	+8.1 Q4	+6.8	+5.0	+4.5	–9.4 Mar	+5.7 Apr	+6.3	+6.0	11.1 Mar‡‡
Mexico	+2.6 Q1	+2.1	+2.1	+2.5	–4.9 Mar	+4.6 Apr	+4.0	+4.7	3.6 Apr‡‡
Venezuela	+4.8 Q1	na	+6.1	+4.9	+12.2 Feb	+29.3 Apr	+19.4	+29.6	8.2 Q1‡‡
Egypt	+6.9 Q1	na	+6.9	+6.8	+7.5 2007**	+16.4 Apr	+11.7	+15.5	9.0 Q4‡‡
Israel	+5.2 Q1	+5.4	+3.5	+3.7	+9.3 Mar	+4.7 Apr	–1.3	+4.1	6.3 Q1
Saudi Arabia	+3.5 2007	na	+6.0	+5.6	na	+10.5 Apr	+2.9	+8.5	na
South Africa	+4.0 Q1	+2.1	+3.9	+4.4	–1.1 Mar	+11.1 Apr	+7.0	+8.2	23.0 Sep‡‡
MORE COUNTRIES Data for the countries below are not provided in printed editions of *The Economist*									
Estonia	+0.4 Q1	+7.8	+2.8	+3.7	–0.2 Apr	+11.4 Apr	+5.5	+9.3	5.5 Mar
Finland	+3.7 Q4	+3.8	+2.7	+2.4	+7.8 Apr	+3.5 Apr	+2.6	+3.0	5.8 Apr
Iceland	+4.6 Q4	+1.4	+1.1	+1.7	+0.4 2007	+12.3 May	+4.7	+10.0	1.0 Apr‡‡
Ireland	+3.5 Q4	–3.3	+2.4	+2.2	+7.0 Mar	+4.3 Apr	+5.1	+3.2	5.5 Apr
Latvia	+3.6 Q1	na	+2.4	+3.0	–5.5 Mar	+17.5 Apr	+8.9	+13.2	4.9 Mar
Lithuania	+6.9 Q1	–0.8	+5.8	+5.5	na	+11.7 Apr	+4.8	+8.8	4.7 Mar‡‡
Luxembourg	+3.8 Q4	+7.4	+3.9	+3.6	+1.6 Mar	+3.5 Apr	+2.1	+3.4	4.2 Mar‡‡
New Zealand	+2.8 Q4	+3.1	+1.7	+2.3	+4.2 Q4	+3.4 Q1	+2.5	+3.2	3.6 Q1
Peru	+5.6 Mar	na	+7.5	+6.4	+6.4 Mar	+5.5 Apr	–0.1	+4.8	8.5 Apr††
Philippines	+5.1 Q1	+3.0	+5.4	+5.5	+8.6 Feb	+9.6 May	+2.4	+5.8	7.4 Q1‡‡
Portugal	+0.9 Q1	–1.6	+1.5	+1.6	–5.2 Mar	+2.5 Apr	+2.7	+2.4	7.6 Q1‡‡
Slovakia	+8.7 Q1	na	+7.5	+5.7	+1.8 Mar	+4.2 Apr	+2.7	+3.5	7.4 Apr††
Slovenia	+4.7 Q4	na	+4.5	+4.0	+1.0 Mar	+6.4 May	+2.9	+5.2	6.9 Mar‡‡

*% change on previous quarter, annual rate. †*The Economist* poll or Economist Intelligence Unit estimate/forecast. ‡National definitions.- §RPI inflation rate 4.2% in Apr. **Year ending June. ††Latest three months. ‡‡Not seasonally adjusted. ***Centred 3-month average

Sources: National statistics offices and central banks; Thomson Datastream; Reuters; Centre for Monitoring Indian Economy; OECD; ECB

The Economist commodity-price index

Jun 5th 2008
From The Economist print edition

The Economist commodity-price index
2000=100

	May 27th	Jun 3rd*	% change on one month	% change on one year
Dollar index				
All items	254.8	250.6	-1.9	+21.3
Food	252.2	252.1	+0.2	+50.0
Industrials				
All	258.1	248.6	-4.5	-3.1
Nfa†	206.3	199.0	+3.0	+19.9
Metals	286.6	275.8	-7.1	-9.9
Sterling index				
All items	195.7	193.3	-1.3	+22.9
Euro index				
All items	149.9	149.9	-1.3	+6.1
Gold				
$ per oz	909.70	881.50	+0.2	+31.2
West Texas Intermediate				
$ per barrel	128.46	124.33	+2.0	+89.5

*Provisional †Non-food agriculturals.

The Economist poll of forecasters, June averages

Jun 5th 2008
From The Economist print edition

***The Economist* poll of forecasters, June averages** (previous month's, if changed)

	Real GDP, % change Low/high range		Real GDP, % change average		Consumer prices % increase		Current account % of GDP	
	2008	2009	2008	2009	2008	2009	2008	2009
Australia	2.2/3.6	2.5/3.8	2.9 (3.0)	3.0 (2.9)	3.6 (3.5)	2.9 (2.8)	-5.9	-4.3 (-5.4)
Belgium	1.5/2.3	1.4/2.1	1.7	1.7	3.0 (2.9)	2.1 (1.9)	2.1	2.0 (2.1)
Britain	1.4/1.9	0.6/2.0	1.7	1.4 (1.7)	3.0 (2.6)	2.4 (2.0)	-3.9 (-4.0)	-3.2 (-3.5)
Canada	0.8/2.0	1.2/2.5	1.4	2.1	1.8	2.1 (2.0)	0.2 (-0.1)	-0.1 (-0.3)
France	1.4/1.9	0.9/2.2	1.7 (1.5)	1.5	2.9 (2.7)	2.0	-1.6 (-1.7)	-1.7 (-1.8)
Germany	1.4/2.2	0.8/2.2	1.9 (1.7)	1.6	2.7 (2.6)	2.0 (1.9)	6.1 (6.2)	5.5 (5.7)
Italy	0.3/1.6	0.4/1.8	0.6	1.1 (1.0)	2.9 (2.8)	2.1 (2.0)	-2.5	-2.4 (-2.5)
Japan	1.0/1.7	0.9/1.8	1.3	1.4 (1.5)	1.1 (0.9)	0.8 (0.7)	4.3 (4.7)	4.2 (4.6)
Netherlands	2.0/3.2	1.4/2.7	2.6 (2.5)	2.0 (1.9)	2.3	2.3	6.0 (6.3)	6.2 (6.6)
Spain	0.9/3.3	0.9/2.8	2.1 (2.2)	1.8	3.8 (3.6)	2.7 (2.5)	-9.1 (-9.2)	-8.4 (-8.5)
Sweden	1.9/2.6	1.5/2.6	2.3	2.1	3.0	2.3 (2.2)	7.2	6.7 (6.9)
Switzerland	1.5/2.6	1.0/2.4	2.1	1.7	2.0	1.3 (1.2)	14.8 (14.9)	14.5 (14.6)
United States	0.8/1.7	1.1/2.5	1.2 (1.1)	1.5 (1.7)	3.8 (3.5)	2.6 (2.2)	-4.9 (-4.6)	-4.5 (-3.5)
Euro area	1.4/2.3	1.1/2.2	1.7 (1.6)	1.5	3.1 (3.0)	2.2 (2.1)	-0.1	-0.1

Sources: ABN AMRO, BNP Paribas, Citigroup, Decision Economics, Deutsche Bank, Economist Intelligence Unit, Goldman Sachs, HSBC Securities, KBC Bank, JPMorgan Chase, Morgan Stanley, Scotiabank, UBS



Trade, exchange rates, budget balances and interest rates

Jun 5th 2008
From The Economist print edition

Trade, exchange rates, budget balances and interest rates

	Trade balance* latest 12 months, $bn	Current-account balance latest 12 months, $bn	Current-account balance % of GDP 2008[†]	Currency units, per $ Jun 4th	Currency units, per $ year ago	Budget balance % of GDP 2008[†]	Interest rates, % 3-month latest	Interest rates, % 10-year gov't bonds, latest
United States	−823.8 Mar	−738.6 Q4	−4.9	–	–	−2.4	2.13	3.94
Japan	+102.8 Mar	+216.6 Mar	+4.3	105	121	−2.9	0.75	1.76
China	+256.5 Apr	+371.8 2007	+10.5	6.94	7.64	0.5	4.49	4.39
Britain	−179.7 Mar	−115.4 Q4	−3.9	0.51	0.50	−3.2	5.83	4.93
Canada	+46.2 Mar	+14.5 Q1	+0.2	1.01	1.06	0.4	2.54	3.75
Euro area	+14.1 Mar	+5.3 Mar	−0.1	0.65	0.74	−0.9	4.86	4.38
Austria	+1.0 Feb	+12.2 Q4	+3.0	0.65	0.74	−0.4	4.86	4.55
Belgium	+14.3 Feb	+2.7 Dec	+2.1	0.65	0.74	−0.4	4.93	4.66
France	−59.3 Mar	−35.7 Mar	−1.6	0.65	0.74	−2.9	4.86	4.56
Germany	+273.9 Mar	+264.5 Mar	+6.1	0.65	0.74	1.1	4.86	4.41
Greece	−60.2 Mar	−45.2 Mar	−13.7	0.65	0.74	−2.6	4.86	4.95
Italy	−12.9 Mar	−57.0 Mar	−2.5	0.65	0.74	−2.6	4.86	4.90
Netherlands	+57.3 Mar	+50.7 Q4	+6.0	0.65	0.74	0.7	4.86	4.57
Spain	−147.1 Mar	−159.3 Mar	−9.1	0.65	0.74	−0.7	4.86	4.60
Czech Republic	+4.4 Mar	−4.7 Mar	−2.9	16.0	21.1	−2.5	4.49	4.98
Denmark	+4.1 Mar	+4.1 Mar	+1.0	4.83	5.52	3.6	5.40	4.64
Hungary	+0.2 Mar	−6.9 Q4	−5.9	157	187	−4.2	8.71	8.20
Norway	+66.9 Apr	+68.8 Q1	+16.8	5.15	5.99	17.5	6.36	4.77
Poland	−14.7 Mar	−18.6 Mar	−3.8	2.18	2.84	−2.1	6.51	6.35
Russia	+152.9 Mar	+92.4 Q1	+5.4	23.8	25.8	2.5	10.50	6.47
Sweden	+18.9 Apr	+40.4 Q1	+7.2	6.05	6.92	2.4	4.04	4.33
Switzerland	+13.6 Apr	+71.1 Q4	+14.8	1.04	1.22	0.9	2.78	3.18
Turkey	−68.6 Apr	−40.4 Mar	−6.5	1.23	1.32	−2.9	17.84	6.68[‡]
Australia	−22.5 Apr	−61.4 Q1	−5.9	1.04	1.19	1.5	7.75	6.54
Hong Kong	−24.4 Apr	+28.0 Q4	+9.1	7.81	7.81	2.9	1.99	3.06
India	−80.5 Apr	−12.8 Q4	−2.4	42.8	40.7	−3.2	7.46	8.43
Indonesia	+38.1 Apr	+11.0 Q4	+2.3	9,316	8,905	−2.1	8.81	7.19[‡]
Malaysia	+33.4 Apr	+28.9 Q4	+12.5	3.24	3.42	−3.1	3.63	4.01[‡]
Pakistan	−19.1 Apr	−8.3 Q4	−8.8	67.4	60.6	−4.7	13.54	11.16[‡]
Singapore	+30.5 Apr	+35.8 Q1	+24.4	1.36	1.53	1.0	1.25	3.21
South Korea	+5.4 May	+6.7 May	+0.3	1,017	927	0.5	5.35	5.67
Taiwan	+13.1 Apr	+32.2 Q1	+5.4	30.3	33.0	−1.8	2.70	2.66
Thailand	+6.3 Apr	+11.7 Apr	+3.2	32.7	34.6	−3.1	3.42	4.89
Argentina	+11.7 Apr	+7.3 Q4	+2.4	3.06	3.08	1.8	15.94	na
Brazil	+31.9 May	−14.7 Apr	−1.1	1.63	1.96	−1.9	11.64	6.16[‡]
Chile	+21.3 Apr	+7.2 Q4	+2.5	490	527	7.0	6.72	4.49[‡]
Colombia	−0.2 Feb	−5.9 Q4	−3.4	1,731	1,889	−1.6	9.81	5.51[‡]
Mexico	−9.6 Apr	−4.8 Q1	−1.2	10.3	10.8	nil	7.45	8.24
Venezuela	+23.7 Q4	+26.7 Q1	+7.0	3.30	4.23[§]	2.1	17.94	6.55[‡]
Egypt	−20.5 Q4	+0.5 Q4	+0.2	5.35	5.70	−7.1	9.66	4.72[‡]
Israel	−12.4 Apr	+5.0 Q4	+0.2	3.33	4.11	−1.4	3.47	5.38
Saudi Arabia	+150.8 2007	+95.0 2007	+38.4	3.75	3.75	26.2	2.88	na
South Africa	−11.1 Apr	−20.6 Q4	−7.8	7.77	7.21	0.4	12.65	10.14
MORE COUNTRIES Data for the countries below are not provided in printed editions of *The Economist*								
Estonia	−4.4 Mar	−3.4 Mar	−12.7	10.1	11.6	0.2	6.47	na
Finland	+12.3 Mar	+12.5 Mar	+3.9	0.65	0.74	4.7	4.71	4.53
Iceland	−1.4 May	−3.2 Q4	−12.2	77.8	62.7	0.7	15.82	na
Ireland	+36.7 Mar	−12.7 Q4	−4.0	0.65	0.74	−0.9	4.86	4.66
Latvia	−7.3 Mar	−6.3 Mar	−13.2	0.45	0.52	nil	5.50	na
Lithuania	−7.8 Mar	−5.8 Mar	−11.5	2.24	2.56	−0.7	5.20	na
Luxembourg	−6.3 Mar	+3.9 Q4	na	0.65	0.74	1.5	4.86	na
New Zealand	−3.5 Apr	−10.2 Q4	−7.3	1.28	1.33	3.1	7.25	6.43
Peru	+8.3 Mar	+0.8 Q1	+0.4	2.82	3.17	1.6	5.50	na
Philippines	−7.3 Mar	+6.4 Dec	+4.0	43.9	45.9	−0.1	6.75	na
Portugal	−28.4 Feb	−24.5 Mar	−8.3	0.65	0.74	−2.5	4.86	4.76
Slovakia	−0.6 Mar	−4.2 Feb	−3.3	19.6	25.4	−2.1	4.16	4.81
Slovenia	−3.3 Mar	−2.8 Mar	−2.5	0.65	0.74	−0.2	na	na

*Merchandise trade only. [†]*The Economist* poll or Economist Intelligence Unit forecast. [‡]Dollar-denominated bonds. [§]Unofficial exchange rate.

Sources: National statistics offices and central banks; Thomson Datastream; Reuters; JPMorgan; Bank Leumi le-Israel; Centre for Monitoring Indian Economy; Danske Bank; Hong Kong Monetary Authority; Standard Bank Group; UBS; Westpac.

Markets

Jun 5th 2008
From The Economist print edition

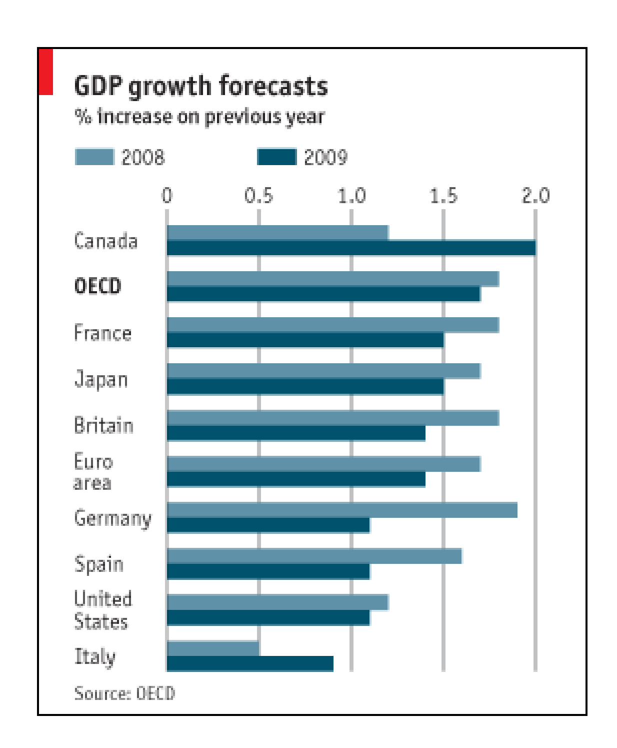
Markets

	Index	% change on	Dec 31st 2007	
	Jun 4th	one week	in local currency	in $ terms
United States (DJIA)	12,390.5	−1.6	−6.6	−6.6
United States (S&P 500)	1,377.2	−1.0	−6.2	−6.2
United States (NAScomp)	2,503.1	+0.7	−5.6	−5.6
Japan (Nikkei 225)	14,435.6	+5.3	−5.7	+0.3
Japan (Topix)	1,430.5	+6.1	−3.1	+3.1
China (SSEA)	3,535.8	−2.6	−36.0	−32.6
China (SSEB, $ terms)	242.5	−2.4	−37.0	−33.7
Britain (FTSE 100)	5,970.1	−1.6	−7.5	−9.3
Canada (S&P TSX)	14,690.5	nil	+6.2	+3.4
Euro area (FTSE Euro 100)	1,171.2	−1.3	−14.8	−10.0
Euro area (DJ STOXX 50)	3,699.1	−1.2	−15.9	−11.2
Austria (ATX)	4,310.1	−1.8	−4.5	+0.9
Belgium (Bel 20)	3,713.0	+0.1	−10.0	−4.9
France (CAC 40)	4,915.1	−1.1	−12.5	−7.5
Germany (DAX)*	6,965.4	−1.0	−13.7	−8.8
Greece (Athex Comp)	4,113.6	+0.6	−20.6	−16.1
Italy (S&P/MIB)	32,508.0	−0.8	−15.7	−10.9
Netherlands (AEX)	478.6	−0.6	−7.2	−2.0
Spain (Madrid SE)	1,434.9	−1.1	−12.6	−7.7
Czech Republic (PX)	1,648.2	−1.7	−9.2	+3.3
Denmark (OMXCB)	425.7	+0.7	−5.1	+0.2
Hungary (BUX)	22,219.0	−2.3	−15.3	−6.8
Norway (OSEAX)	562.1	−1.1	−1.4	+3.9
Poland (WIG)	45,908.7	−2.0	−17.5	−7.1
Russia (RTS, $ terms)	2,353.5	−1.8	−0.4	+2.7
Sweden (Aff.Gen)	308.6	−1.4	−9.4	−3.1
Switzerland (SMI)	7,514.5	+0.5	−11.4	−3.7
Turkey (ISE)	39,832.1	+1.1	−28.3	−31.6
Australia (All Ord.)	5,698.2	−1.0	−11.3	−3.1
Hong Kong (Hang Seng)	24,123.3	−0.5	−13.3	−13.4
India (BSE)	15,514.8	−6.1	−23.5	−29.5
Indonesia (JSX)	2,362.6	−2.9	−14.0	−13.2
Malaysia (KLSE)	1,253.1	−0.6	−13.3	−11.6
Pakistan (KSE)	13,089.5	+6.8	−7.0	−15.0
Singapore (STI)	3,134.8	+0.1	−9.5	−4.5
South Korea (KOSPI)	1,833.8	+1.6	−3.3	−11.1
Taiwan (TWI)	8,627.8	−0.4	+1.4	+8.4
Thailand (SET)	808.9	−2.9	−5.7	−2.9
Argentina (MERV)	2,141.3	−4.1	−0.5	+2.5
Brazil (BVSP)	68,673.0	−6.1	+7.5	+17.2
Chile (IGPA)	14,324.2	+0.1	+1.7	+3.5
Colombia (IGBC)	10,005.5	+1.5	−6.4	+9.0
Mexico (IPC)	31,448.1	−0.6	+6.5	+12.6
Venezuela (IBC)	35,351.8	+1.6	−6.7	−39.3
Egypt (Case 30)	11,071.9	+0.5	+5.8	+9.1
Israel (TA-100)	1,025.6	−0.1	−11.2	+2.7
Saudi Arabia (Tadawul)	9,661.5	+1.8	+21.8	+21.8
South Africa (JSE AS)	31,480.4	−2.3	+8.7	−4.3
Europe (FTSEurofirst 300)	1,311.8	−1.1	−12.9	−8.0
World, dev'd (MSCI)	1,504.6	−0.7	−5.3	−5.3
Emerging markets (MSCI)	1,173.5	−1.8	−5.8	−5.8
World, all (MSCI)	381.6	−0.8	−5.4	−5.4
World bonds (Citigroup)	763.6	−0.6	+4.5	+4.5
EMBI+ (JPMorgan)	443.4	+0.7	+2.3	+2.3
Hedge funds (HFRX)	1,327.0	−0.1	−0.2	−0.2
Volatility, US (VIX)	20.8	19.1	22.5	(levels)
CDSs, Eur (iTRAXX)†	85.5	+4.9	+68.9	+78.4
CDSs, N Am (CDX)†	118.0	+7.3	+34.7	+34.7
Carbon trading (EU ETS) €	26.6	+1.9	+19.8	+26.6

*Total return index. †Credit-default swap spreads, basis points.
Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Reuters; WM/Reuters; JPMorgan Chase; Bank Leumi le-Israel; CBOE; CMIE; Danske Bank; EEX; HKMA; Markit; Standard Bank Group; UBS; Westpac.

GDP growth forecasts

Jun 5th 2008
From The Economist print edition



The OECD's latest forecasts paint a dismal picture of the growth prospects of its 30 mainly rich member states. Developed economies are battling against three powerful forces, stemming from the financial crisis, troubled housing markets and the rise in commodity prices. America's GDP is likely to shrink in this quarter, and growth will slow from 2.2% in 2007 to little more than 1% a year in 2008 and 2009. Hopes that Europe and Japan will withstand an American downturn better than in the past—the beguiling notion of “decoupling”—seem set to be dashed. Growth in the euro area will slow from 2.6% in 2007 to 1.7% this year and 1.4% in 2009. The OECD expects Japanese growth to slow too.